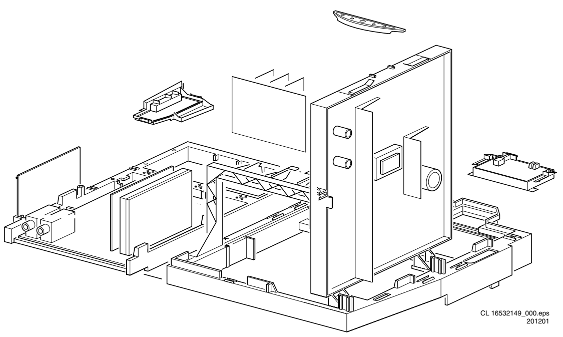
Colour Television Chassis MG3.2E AA

Service
Service
Service



ServiceManual

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Published by CO 0172 Service PaCE Printed in the Netherlands Subject to modification EN 3122 785 11890

PHILIPS

1. Technical Specifications, Connections and Chassis Overview

1.1 Technical Specifications

1.1.1 Vision

Display type : CRT, Real Flat WS
Screen size : 28” (70 cm)
: 32" (82 cm)
: 36” (92 cm)
Tuning system : PLL
Colour systems : PAL: B/G, D/K, I, Plus
: SECAM: B/G,D/K,L/L’
: NTSC: playback only
Channel selections : 100 presets
: UVSH
Aerial input : 75 Ω, IEC-type

1.1.2 Sound

Sound systems : FM-mono, AM-mono
: FM/FM: B/G, Czech
: NICAM: B/G, D/K, I, L
Maximum power : 4 x 20 Wrms (int.)
: 2 x 15 Wrms (ext.)

1.1.3 Miscellaneous

Mains voltage : 220 - 240 V
Mains frequency : 50/60 Hz
Ambient temperature : +5 to +45 deg. C
Maximum humidity : 90 % R.H.
Power dissipation : < 200 W
Standby Power dissipation : < 350 mW

1.2 Connections

1.2.1 Front Control/Side Connections

Front and Side View

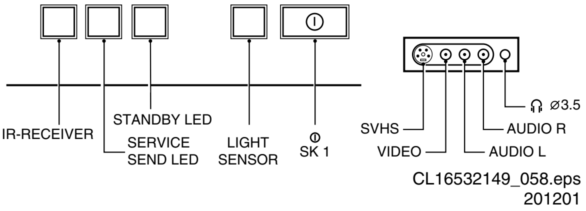

IR-RECEIVER
STANDBY LED
SERVICE SEND LED
LIGHT SENSOR
SK 1
SVHS
VIDEO
AUDIO R
AUDIO L
Ø3.5
CL16532149_058.eps
201201

Figure 1-1

SVHS - In

1	-Y	Ground	⏚
2	-C	Ground	⏚
3	-Y	1 Vpp / 75 Ω	→⊙
4	-C	0.3 Vpp / 75 Ω	→⊙

Cinch - In

1	-CVBS	1 Vpp / 75 Ω	→⊙◎
2	-Audio - L	0.5 Vrms / 10 kΩ	→⊙◎
3	-Audio - R	0.5 Vrms / 10 kΩ	→⊙◎

Mini Jack - Out

-Headphone	32 - 600 Ω / 10 mW	◎ 3.5mm / 🎧

1.2.2 Rear Connections

Connection overview

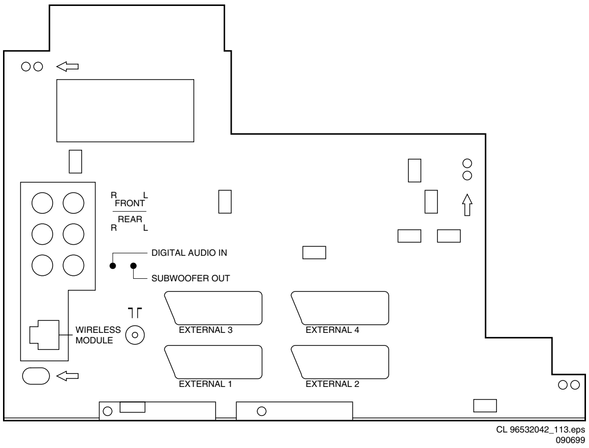

R L
FRONT
REAR
R L
DIGITAL AUDIO IN
SUBWOOFER OUT
WIRELESS MODULE
EXTERNAL 3
EXTERNAL 4
EXTERNAL 1
EXTERNAL 2
CL 96532042_113.eps
090699

Figure 1-2

Cinch: Front R/L - Out

-Audio - R	0.5 Vrms / 1 kΩ	⊙→◎
-Audio - L	0.5 Vrms / 1 kΩ	⊙→◎

Cinch: Rear R/L - Out

-Audio - R	0.5 Vrms / 1 kΩ	⊙→◎
-Audio - L	0.5 Vrms / 1 kΩ	⊙→◎

Cinch: Digital Audio - In

-S/PDIF		→⊙◎

Cinch: Subwoofer - Out

-SW	0.5 Vrms / 1 kΩ	⊙→◎

RJ45: Wireless Surround Transmitter - Out

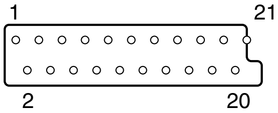
1	-CORDL_L	Signal	⊙→
2	-CORDL_L	Ground	⏚
3	-CORDL_R	Signal	⊙→
4	-CORDL_R	Ground	⏚
5	-12VP_IN	Supply	⊙→
6	-SDA	Signal	→⊙⊙→
7	-SCL	Signal	⊙→
8	-Supply	Ground	⏚

Aerial - In

-IEC-type	Coax, 75 Ω	⊤⊤

External 1 - In/Out (RGB and CVBS)

SCART connector



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171199

Figure 1-3

1	-Audio - R	0.5 Vrms / 1 kΩ	○→
2	-Audio - R	0.5 Vrms / 10 kΩ	→○
3	-Audio - L	0.5 Vrms / 1 kΩ	○→
4	-Audio	Ground	⏚
5	-Blue	Ground	⏚
6	-Audio - L	0.5 Vrms / 10 kΩ	→○
7	-Blue	0.7 Vpp / 75 Ω	→○
8	-CVBS-status	0 - 1.3 V: INT 4.5 - 7 V: EXT 16:9 9.5 - 12 V: EXT 4:3	
9	-Green	Ground	⏚
10	-		
11	-Green	0.7 Vpp / 75 Ω	→○
12	-		
13	-Red	Ground	⏚
14	-Status	Ground	⏚
15	-Red	0.7 Vpp / 75 Ω	→○
16	-RGB-status / FBL	0 - 0.4 V: INT 1 - 3 V: EXT / 75 Ω	
17	-CVBS	Ground	⏚
18	-FBL	Ground	⏚
19	-CVBS	1 Vpp / 75 Ω	○→
20	-CVBS	1 Vpp / 75 Ω	→○
21	-Shielding	Ground	⏚

External 2 - In/Out for VCR (RGB, Y/C and CVBS)

1	-Audio - R	0.5 Vrms / 1 kΩ	○→
2	-Audio - R	0.5 Vrms / 10 kΩ	→○
3	-Audio - L	0.5 Vrms / 1 kΩ	○→
4	-Audio	Ground	⏚
5	-Blue	Ground	⏚
6	-Audio - L	0.5 Vrms / 10 kΩ	→○
7	-Blue / C	0.7 Vpp / 75 Ω	→○
8	-CVBS-status	0 - 1.3 V: INT 4.5 - 7 V: EXT 16:9 9.5 - 12 V: EXT 4:3	
9	-Green	Ground	⏚
10	-Easy Link	(P50)	→○
11	-Green	0.7 Vpp / 75 Ω	→○
12	-		
13	-Red	Ground	⏚
14	-Status	Ground	⏚
15	-Red / C	0.7 Vpp / 75 Ω	→○
16	-RGB-status / FBL	0 - 0.4 V: INT 1 - 3 V: EXT / 75 Ω	
17	-CVBS	Ground	⏚
18	-FBL	Ground	⏚
19	-Y / CVBS	1 Vpp / 75 Ω	○→
20	-Y / CVBS	1 Vpp / 75 Ω	→○
21	-Shielding	Ground	⏚

External 3 - In (CVBS, Audio)

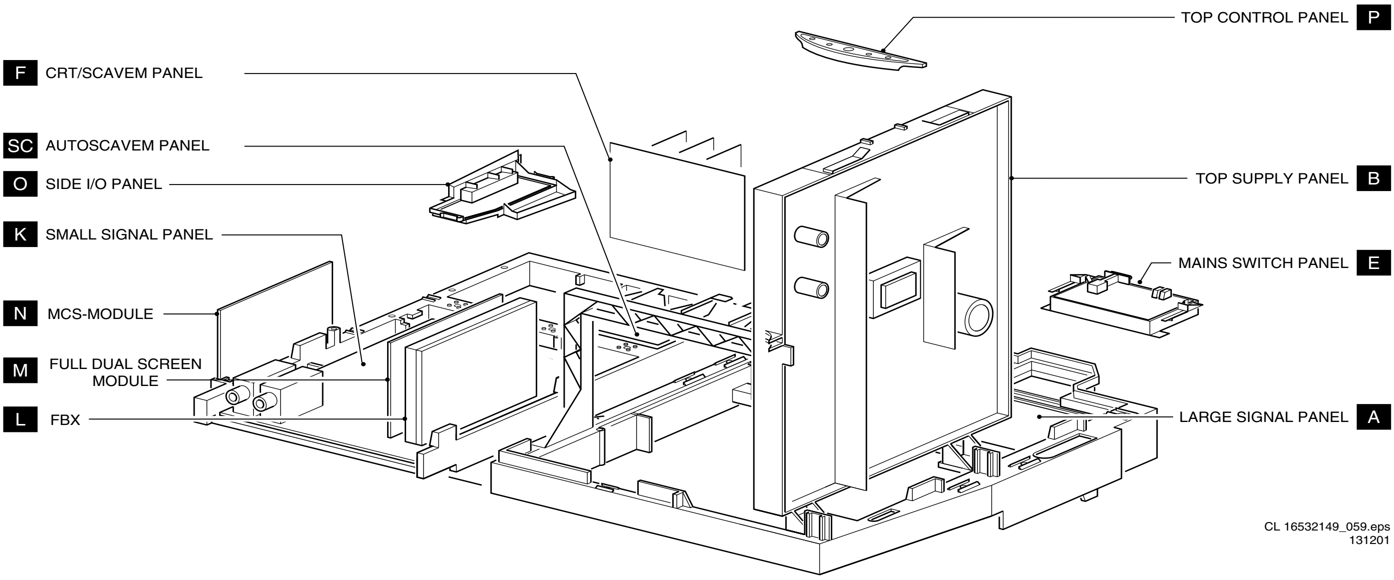
1	-		
2	-Audio - R	0.5 Vrms / 10 kΩ	→○
3	-		
4	-Audio	Ground	⏚
5	-	Ground	⏚
6	-Audio - L	0.5 Vrms / 10 kΩ	→○
7	-		
8	-CVBS-status	0 - 1.3 V: INT 4.5 - 7 V: EXT 16:9 9.5 - 12 V: EXT 4:3	
9	-	Ground	⏚
10	-		
11	-		
12	-		
13	-	Ground	⏚
14	-Status	Ground	⏚
15	-		
16	-		
17	-CVBS	Ground	⏚
18	-CVBS	Ground	⏚
19	-		
20	-CVBS	1 Vpp / 75 Ω	→○
21	-Shielding	Ground	⏚

External 4 - In (CVBS, Audio)

1	-		
2	-Audio - R	0.5 Vrms / 10 kΩ	→○
3	-		
4	-Audio	Ground	⏚
5	-	Ground	⏚
6	-Audio - L	0.5 Vrms / 10 kΩ	→○
7	-		
8	-CVBS-status	0 - 1.3 V: INT 4.5 - 7 V: EXT 16:9 9.5 - 12 V: EXT 4:3	
9	-	Ground	⏚
10	-		
11	-		
12	-		
13	-	Ground	⏚
14	-Status	Ground	⏚
15	-		
16	-		
17	-CVBS	Ground	⏚
18	-CVBS	Ground	⏚
19	-		
20	-CVBS	1 Vpp / 75 Ω	→○
21	-Shielding	Ground	⏚

1.3 Chassis Overview

PWB Location


TOP CONTROL PANEL P
F CRT/SCAVEM PANEL
SC AUTOSCAVEM PANEL
O SIDE I/O PANEL
TOP SUPPLY PANEL B
K SMALL SIGNAL PANEL
MAINS SWITCH PANEL E
N MCS-MODULE
M FULL DUAL SCREEN MODULE
L FBX
LARGE SIGNAL PANEL A
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131201

Figure 1-4

2. Safety and Maintenance Instructions, Warnings, and Notes

2.1 Safety Instructions

Safety regulations require that **during** a repair:

- Connect the set to the mains via an isolation transformer, as there are 'hot' parts in this chassis.
- Replace safety components, indicated by the symbol ⚠, only by components identical to the original ones. Any other component substitution (other than original type) may increase risk of fire or electrical shock hazard.
- Wear safety goggles when you replace the CRT.

Safety regulations require that **after** a repair, you must return the set in its original condition. Pay, in particular, attention to the following points:

- General repair instruction: as a strict precaution, we advise you to re-solder the solder connections through which the horizontal deflection current is flowing. In particular this is valid for the:
  1. pins of the line output transformer (LOT).
  2. fly-back capacitor(s).
  3. S-correction capacitor(s).
  4. line output transistor.
  5. pins of the connector with wires to the deflection coil.
  6. other components through which the deflection current flows.

Note: This re-soldering is advised to prevent bad connections due to metal fatigue in solder connections, and is therefore only necessary for television sets more than two years old.

- Route the wire trees and EHT cable correctly and secure them with the mounted cable clamps.
- Check the insulation of the mains cord for external damage.
- Check the strain relief of the mains cord for proper function, to prevent the cord from touching the CRT, hot components, or heat sinks.
- Check the electrical DC resistance between the mains plug and the secondary side (only for sets that have an isolated power supply). Do this as follows:
  1. Unplug the mains cord and connect a wire between the two pins of the mains plug.
  2. Turn on the main power switch (keep the mains cord unplugged!).
  3. Measure the resistance value between the pins of the mains plug and the metal shielding of the tuner or the aerial connection of the set. The reading should be between 4.5 MΩ and 12 MΩ.
  4. Switch the TV 'off' and remove the wire between the two pins of the mains plug.
- Check the cabinet for defects, to prevent the possibility of the customer touching any internal parts.

2.2 Maintenance Instructions

We recommend a maintenance inspection carried out by qualified service personnel. The interval depends on the usage conditions:

- When a customer uses the set under normal circumstances, for example in a living room, the recommended interval is three to five years.
- When a customer uses the set in an environment with higher dust, grease, or moisture levels, for example in a kitchen, the recommended interval is one year.
- The maintenance inspection includes the following actions:
  1. Perform the 'general repair instruction' noted above.
  2. Clean the power supply and deflection circuitry on the chassis.
  3. Clean the picture tube panel and the neck of the picture tube.

2.3 Warnings

- In order to prevent damage to ICs and transistors, avoid all high voltage flashovers. In order to prevent damage to the picture tube, use the method shown in Fig. 2-1, to discharge the picture tube. Use a high voltage probe and a multi-meter (position V_{DC}). Discharge until the meter reading is 0 V (after approx. 30 s).

Discharge Picture Tube

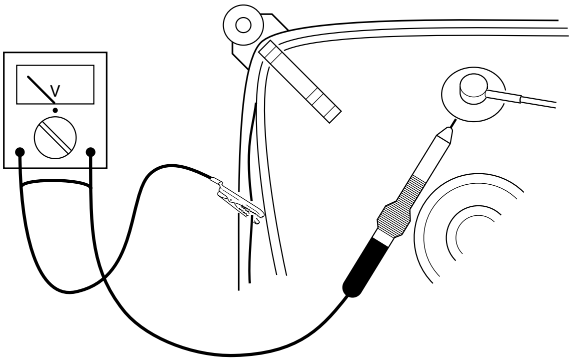

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Figure 2-1

- All ICs and many other semiconductors are susceptible to electrostatic discharges (ESD, symbol ⚠). Careless handling during repair can reduce life drastically. Make sure that, during repair, you are connected with the same potential as the mass of the set by a wristband with resistance. Keep components and tools also at this potential. Available ESD protection equipment:
  - Complete kit ESD3 (small tablemat, wristband, connection box, extension cable and ground cable) 4822 310 10671.
  - Wristband tester 4822 344 13999.
- Together with the deflection unit and any multi-pole unit, flat square picture tubes form an integrated unit. The deflection and the multi-pole units are set optimally at the factory. We do not recommend adjusting this unit during repair.
- Be careful during measurements in the high voltage section and on the picture tube.
- Never replace modules or other components while the unit is 'on'.
- When you align the set, use plastic rather than metal tools. This will prevent any short circuits and the danger of a circuit becoming unstable.

2.4 Notes

- Measure the voltages and waveforms with regard to the chassis (= tuner) ground (⏚), or hot ground (⏚), depending on the tested area of circuitry.
- The voltages and waveforms shown in the diagrams are indicative. Measure them in the Service Default Mode (see chapter 5) with a colour bar signal and stereo sound (L: 3 kHz, R: 1 kHz unless stated otherwise) and picture carrier at 475.25 MHz (PAL) or 61.25 MHz (NTSC, channel 3).
- Where necessary, measure the waveforms and voltages with (⊤) and without (⊻) aerial signal. Measure the voltages in the power supply section both in normal operation (①) and in standby (⏻). These values are indicated by means of the appropriate symbols.
- The picture tube panel has printed spark gaps. Each spark gap is connected between an electrode of the picture tube and the Aquadag coating.

- The semiconductors indicated in the circuit diagram and in the parts lists, are interchangeable per position with the semiconductors in the unit, irrespective of the type indication on these semiconductors.
- Manufactured under license from Dolby Laboratories. ‘Dolby’, ‘Pro Logic’ and the ‘double-D symbol’, are trademarks of Dolby Laboratories.

Dolby PL Symbol

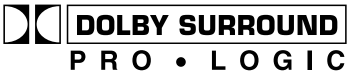
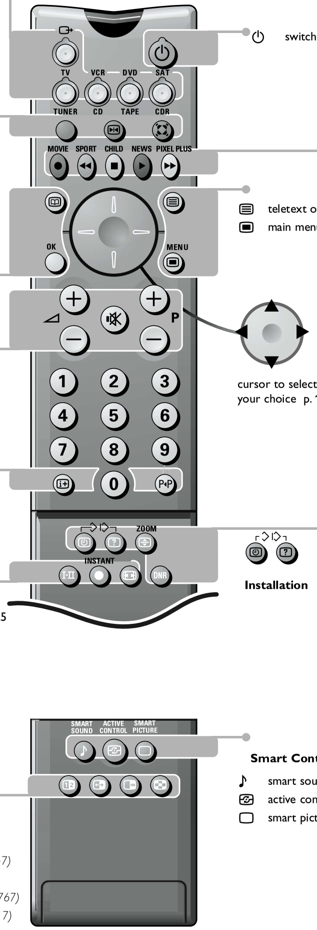


Figure 2-2

3. Directions for Use

Installation

Your remote control



Peripherals p. 31
selection of EXT1, EXT2, EXT3, EXT4 or FRONT
TV, videorecorder (**VCR**), **DVD**, Satellite (**SAT**), **TUNER**, **CD**, **TAPE** or cd-recordable (**CDR**) selection.

○ no function
freeze the picture p. 10
hold teletext page p. 26
surround modes p. 10

NEXTVIEW on/off p. 10
OK activate your choice

volume up/down p. 10
sound mute p. 10
P programme selection p. 10

on screen info p. 10
P•P previous programme p. 10
-/-- video recorder function p. 10

I-II bilingual choice/sound info p.12
TXT language group selection p. 25

EasyLink p. 12
● INSTANT recording

picture format p. 12

Dual Screen p. 18-19
dual screen on
swap screens *(only for 32-36PW9767)*
still picture
multipip p. 11 *(only for 32-36PW9767)*
strobe p. 11 *(only for 28-32PW9617)*

switch to standby p. 10

teletext on/off p. 25
main menu on/off p. 13

cursor to select your choice p. 13

Installation p. 5

Smart Controls
♪ smart sound p. 11
active control p. 11
smart picture p. 11

Colour keys
- select TV channels by theme p. 12
- direct teletext page or subject selection p. 25
- Pixel Plus p. 12

Audio and Video equipment
p. 31-32

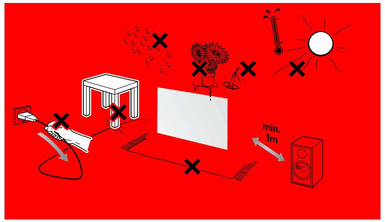
Teletext p. 26
time display/subpage selection
solution to puzzles
display PDC/VPS code
enlarge

DNR reduce image noise p. 12

Zoom p. 12
zoom on/off

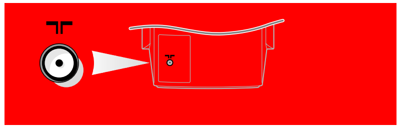
Preparation

❶ **Place the TV on a solid surface.**

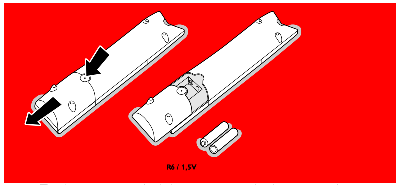


For ventilation, leave at least 5 cm free all around the TV. Do not place the TV on a carpet.
To prevent any unsafe situations, do not place any objects on top of the TV. Avoid heat, direct sunlight and exposure to rain or water.
Keep mobile telephones at a safe distance to avoid disturbances in picture and sound.

❷ **Insert the aerial plug** firmly into the aerial socket ╦ at the back of the TV. For best picture quality use the suppressor-aerial cable supplied.



❸ Remote control: Remove the cover of the battery compartment.
Insert the 2 batteries supplied (Type R6-1,5V).
Press the **TV** key to be sure your remote control is in the TV mode.



The batteries supplied do not contain the heavy metals mercury and cadmium. Nevertheless in many countries exhausted batteries may not be disposed of with your household waste. Please check on how to dispose of exhausted batteries according to local regulations.

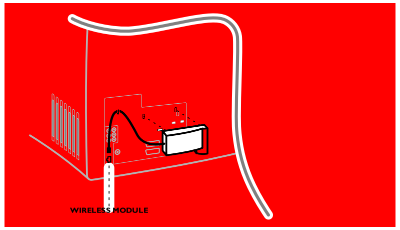
Note: this remote control functions with TVs and other equipment which use the RC6 signalling standard.

❹ **Wireless surround speaker system.**
Supplied and separately packed with your TV are:
- a wireless transmitter module with an integrated cable
- 2 surround loudspeakers
- connection cable

Wireless transmitter module

- Attach the wireless module to the back of the TV as shown.
- Connect the attached cable to the wireless module connector.

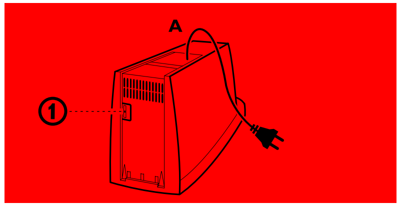
Note: Make sure you only switch the TV on after you have plugged in the wireless module.

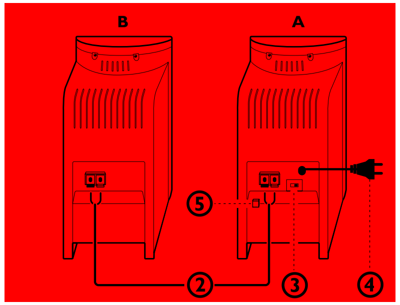


❺ **Insert the mains plug of the TV** in the wall socket having a mains voltage of 220V-240V.
To prevent damaging the mains (AC) cord which could cause a fire or electric shock, do not place the TV on the cord.

❻ **Switch the TV on :** Press the power switch ⏻ on the front of your TV.
A green indicator on the front of the TV lights up and the screen comes on.
If the indicator is red, press the **-P+** keys on the remote control.

The green lamp blinks every time you press a key on the remote control.
*When you switch on your set **for the first time**, the menu **LANGUAGE** automatically appears on the screen. The explanation appears in different languages one at a time. Choose your own language and press the **OK** key on the remote control.*



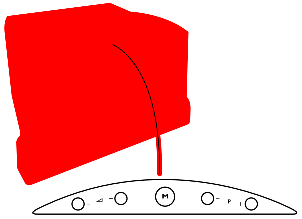


Surround loudspeakers

There are two surround loudspeakers supplied. One is the active loudspeaker A. The other loudspeaker B is a passive one which has to be connected with the active loudspeaker.

- The slide channel switch ① at the bottom of the active loudspeaker has been set default to channel 1 in the factory. See also Sound Setup, p. 9.
- Connect the active to the passive loudspeaker with the supplied speaker cable ②.
  Insert the marked wire into the openings of the same coloured connector clips on both speakers. Do not insert the wires too far.
- The Surround sound loudspeakers can be located behind or to either side of the listener. The front of the loudspeakers do not have to face the listener.
  The distance between the TV and the surround speakers should not exceed 15 m.
  Note: In rare occasions people moving around close to the TV may interfere with the sound transmission.
- Set the position switch ③ to the right if the active loudspeaker is positioned to the right side of the listener, to the left if it is positioned to the left side of the listener (seen from the point of view of watching the TV).
- Connect the active loudspeaker to the mains with the mains cable ④.
- Switch on the active loudspeaker with the **POWER** switch ⑤.
  The red indicator at the front of the active surround speaker shows that the speaker is in standby.
  During sound transmission the indicator turns to green. 10-15 min. after the sound transmission of the TV has stopped, the indicator turns back to red to indicate the low power standby.
  To switch the active speaker off, use the **POWER** switch.

Keys on top of the TV

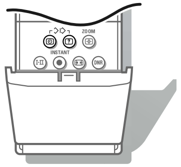


Should your remote control be lost or broken you can still change some of the basic picture settings with the keys on top of the TV.

Press the **M** key repeatedly to select **Volume**, **Brightness**, **Colour**, **Contrast**, **Treble** and **Bass**.
Press the **P** - or + keys to carry out the selected adjustment.
When the menu adjustment is not displayed, the **P-** or **+** keys enable you to select the TV channels, the ⊿ - or + keys to adjust the volume.

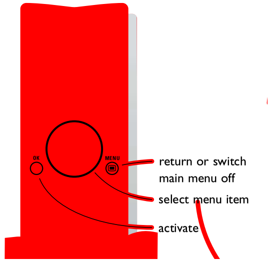
The selected adjustment automatically switches off when no action has been executed for 10 seconds.

Select the INSTALLATION menu

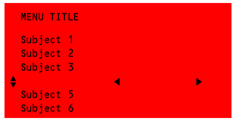


① Open the door of the remote control.
② Press ⓞ and ⓘ at the same time.

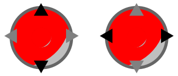
To use the menus



① Use the cursor in the up/down, left/right directions to select a menu item.
② Press the **OK** key to activate.
③ Use the ▣ key to return or to switch the menu off.



```
MENU TITLE

Subject 1
Subject 2
Subject 3

Subject 5
Subject 6
```



Store TV channels

*After the new or extra TV channels have been stored, the TV automatically transfers those TV channels to the video recorder if it is equipped with the EasyLink function. The message **EasyLink : Downloading ......** appears on the screen. The programme list of the video recorder is now the same as the one of the TV. If the TV is connected to a video recorder which supports the NEXTVIEWLink function, the TV also automatically transfers the language and country selections to the video recorder.*

Select the menu language and country

```
Menu Language
```

```
English
....
....
```

```
UK
....
....
```

First, select your language and country.

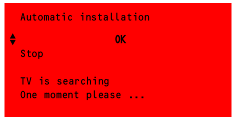
① Select **Menu language** and press the **OK** key.
② Select your language and press the **OK** key.
Use the cursor up/down to scroll through the list and to bring up other languages which are not displayed on the screen at present.
③ Select **Country** and press the **OK** key.
④ Select the country where you are now located and press the **OK** key.
Use the cursor up/down to scroll through the list and bring up other countries which are not displayed on the screen at present.

Select **Other** when none of the countries applies.

You can now search for and store the TV channels in two different ways: using **automatic installation** or **manual installation** (tuning-in channel by channel).
Select your choice and press the **OK** key.

Automatic installation

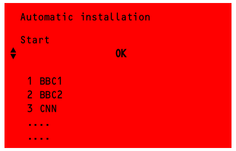
In the Automatic Installation menu select **Start** and press the **OK** key to activate the searching. All TV channels are searched for and stored automatically.



```
Automatic installation
↕             OK
Stop

TV is searching
One moment please ...
```

If a cable system which broadcasts ACI (Automatic Channel Installation) or a TV channel transmitting a teletext page with the frequencies and programme names of all the TV channels which can be received, is detected, the search is stopped and a programme list appears.

The programme list is automatically filled with all the programme numbers and names of the TV channels transmitted.



```
Automatic installation

Start
↕             OK

 1 BBC1
 2 BBC2
 3 CNN
 ....
 ....
```

It is possible that the cable company or the TV channel displays a broadcast selection menu. Layout and items are defined by the cable company or the TV channel.
Make your choice with the cursor and press the ***OK*** *key.*

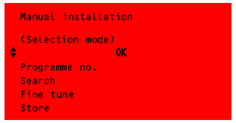
To exit from the menu press the ▣ key on the remote control.

Go on to page 7.

Manual installation

Searching for and storing TV channels is done channel by channel.
You must go through every step of the Manual Installation menu.

Selection mode is only present and lights up if the country selected also offers the channel option (C-channels for aerial, S-channels for cable channels).
You can choose either channel or frequency mode.



```
Manual installation

(Selection mode)
↕                 OK
Programme no.
Search
Fine tune
Store
```

① Select the TV system
Select the country or part of the world from where you want to receive the TV channel.
If you are connected to a cable system, select your country or part of the world where you are now located.

② Press the cursor down and enter the programme number with the digit keys.

③ Search for a TV channel
Press the cursor left/right.
The frequency or the channel number increases until a TV channel is found.

Direct selection of a TV channel
If you know the frequency, the C- or S-channel number, enter it directly with the digit keys 0 to 9.
Ask for a list from your cable company or dealer, alternatively consult the Table of frequencies on the inside backcover of this handbook.

④ Fine tune
In case of poor reception, you can improve the reception by adjusting the frequency with the cursor left/right.

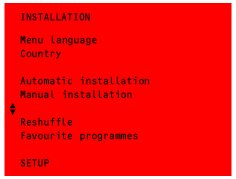
⑤ To store your TV channel, select **Store** and press the **OK** key.

Repeat steps ① to ⑤ to store another TV channel.

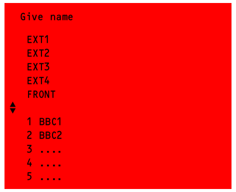
⑥ To exit from the menu press the ▣ key on the remote control.

Give name

It is possible to change the name stored in the memory or to assign a name to a TV channel which has not yet been entered. A name with up to 5 letters or numbers can be given to the programme numbers 0 to 99. For example SUPER, BBC1,...
Between 99 and 0 you can also name any peripherals that are connected to a euroconnector.



```
INSTALLATION

Menu language
Country

Automatic installation
Manual installation
↕
Reshuffle
Favourite programmes

SETUP
```

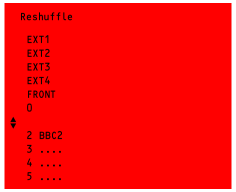


```
Give name

 EXT1
 EXT2
 EXT3
 EXT4
 FRONT
↕
 1 BBC1
 2 BBC2
 3 ....
 4 ....
 5 ....
```

① Select **Give name** in the **INSTALLATION** menu and press the **OK** key.
② Select the programme number.
③ Press the **OK** key.
④ Select the character with the cursor up/down.
⑤ Select the following position with the cursor right.
⑥ Select the following character.
⑦ Press the **OK** key when finished.
⑧ Press the ▣ key to return to the **INSTALLATION** menu.

Space, numbers and other special characters are located between Z and A.

Reshuffle the programme list



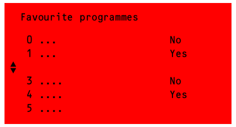
```
Reshuffle

 EXT1
 EXT2
 EXT3
 EXT4
 FRONT
 0
↕
 2 BBC2
 3 ....
 4 ....
 5 ....
```

According to your preference you **can** change the order of the stored TV channels.

① Select **Reshuffle** in the **INSTALLATION** menu and press the **OK** key.
② Select the programme number you want to exchange.
③ Press the **OK** key.
④ Select the new number you want to exchange it with.
⑤ Press the **OK** key.
Repeat the operation until all TV channels are allocated as you like.
⑥ Press the ▣ key to return to the **INSTALLATION** menu.

Select Favourite TV channels

After leaving the installation you can browse through the TV channels by pressing the **- P +** keys. Only those TV channels which are in the favourite list will be displayed. Non-favourite TV channels can still be selected with the digit keys. By default all stored TV channels are added to the favourite list.



```
Favourite programmes

 0 ...                    No
 1 ...                    Yes
↕
 3 ....                   No
 4 ....                   Yes
 5 ....
```

① Select **Favourite programmes** in the **INSTALLATION** menu and press the **OK** key.
② Select your favourite programme number.
③ Select **Yes** or **No** with the cursor left/right.
④ Repeat for every TV channel you want to make a favourite or a non-favourite TV channel.
⑤ Press the ▣ key to return to the **INSTALLATION** menu.

In order for NEXTVIEW to function properly, the first TV channel from the favourite list should also broadcast the correct local date and time via teletext.

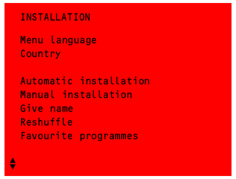
Install TV Setup

The Setup menu allows you to adjust initial settings, i.e. those which are not related to the installation of the TV channels.
The Setup menu contains items that control the settings of the TV's functions, features, services and peripherals you may have connected.

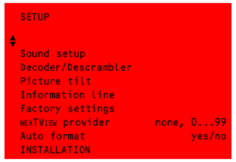
① Use the cursor in the up/down, left/right directions to select the menu item.

② Use the **OK** key to activate.

③ Use the ▣ key to return or switch menu off.



```
INSTALLATION

Menu language
Country

Automatic installation
Manual installation
Give name
Reshuffle
Favourite programmes
```

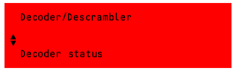


```
SETUP

Sound setup
Decoder/Descrambler
Picture tilt
Information line
Factory settings
NEXTVIEW provider          none, 0...99
Auto format                      yes/no
INSTALLATION
```

Digital sources
See Connect Peripheral Equipment, p. 29 to connect your digital equipment, like a DVD, a digital satellite tuner or a similar digital device.

Sound Setup
See p. 9.

Decoder/Descrambler programme numbers
If a decoder or a descrambler is connected, see p. 27, you can define one or more programme numbers as decoder programme numbers.



```
Decoder/Descrambler

Decoder status
```

Press the cursor left/right to select the input used to connect to your decoder **Off**, **EXT1** or **EXT2**.
Select **Off** if you do not want the selected programme number being activated as a decoder programme number.

Select **EXT2** *when the decoder is connected to your EasyLink video recorder.*
When selecting the decoder, the message ***EasyLink: Downloading Presets....*** *appears on the screen.*

Picture tilt
Select **Picture tilt** with the cursor up/down.
Keep the cursor left/right pressed to adjust the rotation of the picture.

Information line
Select **On** and after the selection of a TV programme or after pressing the ⊞ key on the remote control, a TV channel which broadcasts teletext may transmit the name of the TV channel, the programme name or another message. This is displayed on screen next to information about sound, picture format and DNR setting.
When selected **Off**, only sound, picture format and DNR information is displayed after the selection of a TV channel or after pressing the ⊞ key.

Factory settings
Select **Factory settings** and press the **OK** key to restore picture and sound settings, predefined in the factory.

Auto format
Selecting **Yes** causes the screen to automatically fill as much of the picture as possible when TV programmes are not carrying special signals detecting the correct screen format.
With the ⊟ key on the remote control you can still select other picture formats. See p. 12.

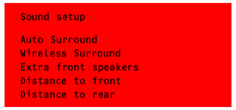
NEXTVIEW provider
Most broadcasters in Europe are offering teletext pages containing the day's programme schedule. These pages can be requested by switching the TV to Teletext Guide.
An increasing number of broadcasters are offering an extended programme guide service called NEXTVIEW.
NEXTVIEW is a new way of presenting programme schedules and offers more features than basic teletext.
With NEXTVIEW it is possible to show for instance all the movies or children programmes for tonight or the following days.

If you select **None** as NEXTVIEW provider, the TV will capture all data from the available TV channels which broadcast NEXTVIEW. Broadcaster defined menus will not be available.
If you select a programme number of a TV channel stored in the favourite list as NEXTVIEW provider, the selected TV channel will provide NEXTVIEW data and additional information of its own broadcasts as well as from other (non selected) TV channels.
Normally you will select the NEXTVIEW provider that transmits most information in your language. You can make the best selection via information from TV announcements or from the newspapers.

Important:
In order for NEXTVIEW to function properly, the first TV channel from the favourite list should also broadcast the correct local date and time via teletext.
Please check at startup if the time and date are correct in the NEXTVIEW screen.

Remark:
Not all TV channels support NEXTVIEW.
How to make use of NEXTVIEW, see p. 20.

Sound Setup menu



```
Sound setup

Auto Surround
Wireless Surround
Extra front speakers
Distance to front
Distance to rear
```

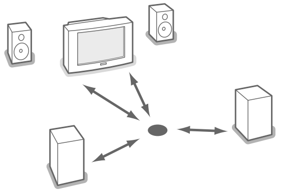
Auto Surround
Sometimes the broadcaster transmits special signals for Surround Sound encoded programmes.
The TV automatically switches to the best surround sound mode when **Auto Surround** is switched **On**.
However it is possible to overwrite this setting.

Wireless Surround
The system has already been configured in the factory to work properly.
In rare circumstances, interference from external RF (wireless) equipment such as RF headphones, mobile phones or remote controls for lights, may occur. Then it may be necessary to shift to another wireless channel.
Use the cursor left/right to select another channel.
Important:
Always be sure that the active surround speaker and the Wireless Surround setting are switched to the same transmitting channel. Otherwise no sound or only a distorted sound will be heard on the surround speakers.

When the TV is tuned to a channel in the neighbourhood of 864 MHz (433 MHz in case you purchased a TV with a typenumber in the range 28-32PW9617/01 or /58 or 32-36PW9767/01 or /58), the transmitter is switched off because no RF surround sound is possible. This is necessary to avoid interfered picture. You can improve the picture quality by using the suppressor aerial cable supplied.

In rare cases, when no RF surround sound is possible or when there is too much interference, use the wired back up solution with a 3.5 mm stereo jack. In this case select **Off** in the Wireless surround menu item. See Connect Peripheral equipment, p. 28.

Extra front speakers
See Connect Extra loudspeakers, Amplifier, p. 30.
If no extra front speakers/amplifier are connected, do not change the predefined factory setting which is **No (TV)**.



Distance to front
Select the distance between the TV and the place you sit to watch TV.

Distance to rear
Select the distance between the rear surround speakers and the place you sit.

To exit from the menu press the ▣ key repeatedly.

Operation

Use of the remote control

Select peripherals
Press this key repeatedly to select **EXT1**, **EXT2**, **EXT3**, **EXT4** or **FRONT**, according to where you connected the peripherals (p. 31).

TV VCR DVD SAT TUNER CD TAPE CDR
Press one of these keys to use the remote control directly in the TV, video recorder, DVD or satellite mode. A green indicator lights up. Press the same key again within 3 seconds to use the remote control in the mode indicated below the key (tuner, CD, tape or CD-recordable).
A red indicator lights up.
Press the key again to return to the function mentioned above the key.

○ no function

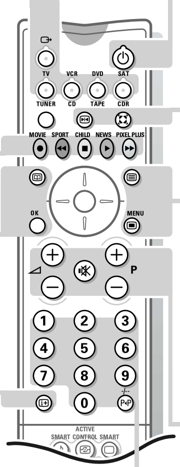
● ◀◀ ■ ▶ ▶▶ **Video recorder** see p. 31

NEXTVIEW on/off see p. 20

OK Press this key to activate your choice, when in the menus.

Screen information
Press for 5 seconds to activate/de-activate the extended or reduced display of TV channel and programme information on the screen.

Press briefly to display information about the selected TV channel and programme, the sound reception, picture settings, the selected DNR setting and the remaining time set with the sleeptimer.



0/9 Digit keys
To select a TV channel.
For a two digit programme number, enter the second digit within 2 seconds.
To switch immediately to a selected one digit TV channel, keep the digit key pressed a bit longer.

P◂P Previous programme
The previously selected TV channel is displayed.
The -/-- indication is only for video recorder.

Standby
The set is switched off and the red indicator (orange when acquiring NEXTVIEW information) lights up. When acquiring NEXTVIEW the TV is switched to full standby after a period of max. 1 hour and the red indicator lights up.
To switch the TV on again, press **- P +** or the digit keys.
If your EasyLink video recorder has the system standby function and you press the standby key for 3 seconds, both the TV and video recorder are switched to standby.

Freeze
To activate/de-activate the frozen picture and to hold a teletext page.

Surround mode
Press this key repeatedly to select another available surround mode: Dolby Pro Logic, 3D Surround, Dolby 3 Stereo, Stereo, Hall or Dolby Digital.

Teletext on/off see p. 25

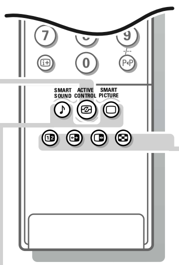
Main menu on/off see p. 13

Volume
Press + or - to adjust the volume.

Mute
Temporarily interrupt the sound or restore it.

P Programme selection
To browse through the TV channels activated in the Favourite Programme menu.

Active control
Active control is a pro-active and automatic system. The TV continuously measures and corrects all incoming signals in order to provide the best picture possible. Thanks to the Ambient Light Sensor which measures the light conditions of the room in which the TV is situated, the contrast, dynamic contrast, brightness and colour picture settings are adjusted automatically. The light sensor is active when the Active control function is switched to Medium (if provided) or Maximum. Press the key repeatedly to select the Active Control values Off, Minimum, Medium (if provided) or Maximum.
Off Sharpness and Dynamic Contrast are controlled automatically
Minimum Sharpness, Dynamic Contrast and Noise Reduction are controlled automatically.
(**Medium** Dynamic Contrast, Colour, Sharpness and Noise reduction are controlled automatically.)
Maximum Contrast (if provided), Dynamic Contrast, Colour, Sharpness and Noise reduction are controlled automatically.
Press the cursor in the up/down directions while the selected Active Control setting information is on top of the screen.
The Active Control menu appears.
The picture settings are being adapted continuously and automatically.
The menu items cannot be selected.
Colour enhancement (green enhancement, skintone correction and blue stretch) is switched on with certain Smart Picture selections.
Press the cursor in the up/down directions again to switch off the menu.



For 32-36PW9767

Dual screen see p. 18

Multipip
Press ▦ to switch on Multipip.
A menu line **MOSAIC** appears.
Select the desired function with the cursor left/right and press the **OK** key.
Scan: a scan of the TV channels placed in the favourite list is performed.
Press the **OK** key again to have the continuation of the list.
Photo Finish: the main picture is displayed in successive frozen pictures.
Press the **OK** key again to have a new sequence of frozen pictures.
Strobe: the picture is reproduced image by image.
Press the **OK** key again to have a faster speed.

Press ▦ to switch off multipip.

For 28-32PW9617

Dual screen see p. 19

no function

Strobe
Press this key to reproduce the picture image by image.
Press the ▦ key again to have a faster speed.
Press the ▦ again to switch off the strobe function.

Smart Keys
To select predefined picture and sound settings.

♪ **Smart Sound**
Each time it is pressed, a different sound setting is selected, corresponding with specific factory settings of treble and bass.

Smart Picture
Each time it is pressed, a different picture setting is selected, corresponding with specific factory settings of Contrast, Colour, Sharpness, Dynamic Contrast and Colour enhancement.

Personal refers to the personal preference settings of picture and sound selected in the picture and sound menu.

Remark: the moment you are in a predefined smart sound or picture setting and you modify a setting in the picture or sound menu, all values of the menu will overwrite the previously made settings.

I-II Bilingual choice and sound mode selection

Press this key
- to switch from **Stereo** to **Mono** sound, in case of stereo transmission, or from **Nicam Stereo** to **Nicam available**, in case of digital transmission;
- to choose between language I (Dual I) or language II (Dual II), in case of bilingual transmission. The setting is separately stored for each TV channel.

● Instant record

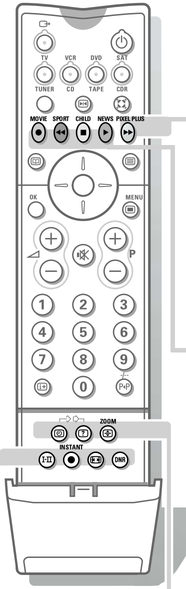
If your video recorder has the EasyLink function the **INSTANT** ● key for record can be operated in the TV mode.

Picture format

Press this key repeatedly to select another picture format: 4:3, Movie Expand 14:9, Movie Expand 16:9 with or without subtitling, Wide Screen, Super zoom or Automatic (when Auto format is set to Yes in the **SETUP** menu).
Auto format makes the picture to fill the screen as much as possible.
Sometimes also video recorder programmes carry special signals which will automatically switch the TV to the correct screen format.
Auto format is disabled when in Dual screen.
When in Automatic, Movie Expand 14:9 or 16:9 or Super zoom picture format you can make subtitles visible with the cursor up/down.

DNR Dyn. Noise Reduction

To reduce the image noise and improve picture quality when receiving weak signals. Press the DNR key to select **Off**, **Minimum**, **Medium** or **Maximum**.



Switching Pixel Plus demo on/off

Press the **PIXEL PLUS** key.
The TV screen is divided into 2 parts:
- in the left part Pixel Plus and Digital Natural Motion switched off;
- in the right part Pixel Plus and Digital Natural Motion switched on.

Press the **PIXEL PLUS** key again to switch the Pixel Plus demo off.

Select TV channels by theme

If programmes in the TV guide of NEXTVIEW have defined themes, it is possible to quickly select TV programmes with the coloured keys.

Press the red, green, yellow or blue key to select one of the four predefined theme categories **MOVIES, SPORTS, CHILDREN, NEWS.**
The TV switches to the first TV channel broadcasting a programme of the selected theme. At the same time a list of all the TV channels currently transmitting a programme of the selected theme appears on the screen.
Use the cursor up/down to select a programme.
Press the same colour key again to remove the list.

Time display

The time, downloaded from the TV channel (with teletext) stored on programme number 1 or the lowest favourite programme number, is displayed on the screen.

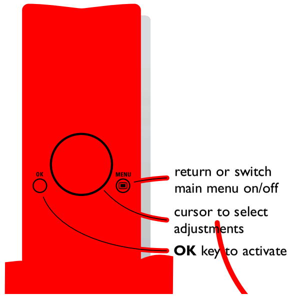
This function is not available when continuous subtitles have been switched on.

Teletext functions see p. 26

Zoom

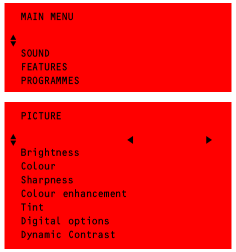
Press the **ZOOM** key repeatedly to select one of the zoom magnifications (x1, x4, x9, x16). Additionally you can shift the selected zoom window over the screen with the cursor.
Press to activate/de-activate the continuous display of the zoom magnification.
The zoom window is reset after: selecting another TV channel, another picture format or when another picture format is selected automatically.
Zooming is disabled in Dual screen mode.

Use of the menus


OK
MENU
return or switch main menu on/off
cursor to select adjustments
OK key to activate

1. Press the key to display/cancel the **MAIN MENU**.
2. Use the cursor in the up/down directions to select the **PICTURE**, **SOUND** or **FEATURES** menu or to select **PROGRAMMES**.
3. Press the cursor right to activate the selected menu.
4. Use the cursor in the up/down, left/right directions to select the menu item.
5. Use the **OK** key to activate.
6. Press the key repeatedly to return or to switch the menu off.

Picture menu



If an NTSC peripheral is connected to one of the euroconnectors, the option Hue also appears.

Colour enhancement
When activated, this feature automatically controls skin tone correction, green enhancement and blue stretch. It makes the colours more vivid.
Select **On** or **Off** in order to activate/de-activate Colour enhancement.

Tint
Select the colour temperature: **Normal**, **Warm** or **Cool**.

Digital options
Although Pixel Plus is the most ideal setting, it may be preferable, dependent on your own preference, to select Double lines ,or 100 Hz Digital Scan.

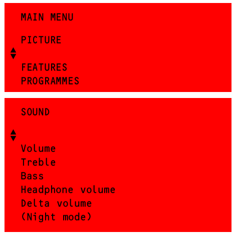
- **100 Hz Dig. Scan** = 100 Hz + Dig. Scan (Field and line flicker reduction) without motion compensation.
- **Pixel Plus** = creates near High Definition performance inside the TV on the basis of a regular input signal.
  The number of lines are increased and the number of pixels on a line are doubled in combination with Digital Natural Motion.
  As such Pixel Plus enhances both regular broadcast signals and DVD or Digital TV input towards unparalleled sharpness and depth, near High Definition and natural detail.
- **Double Lines** = provides for a doubling of vertical resolution which adds astonishing sharpness and a total absence of visible picture lines.
  Motion compensation reduces jitter and offers smooth, yet sharp motion reproduction.

Note:
Pixel Plus is not active when Multi screen (Strobe), Teletext (Except when Subtitling is activated), NEXTVIEW or Teletext Dual screen is selected.

Dynamic Contrast
To make the contrast in the darker and the brighter picture areas more noticeable, select the **Med** setting.
In certain circumstances it may be preferred to select **Min**, **Max** or **Off**.

The modified adjustments for Contrast, Brightness, Colour, Sharpness, Colour enhancement, Tint, Digital options and Dynamic Contrast are automatically stored for all TV channels.
Select **Factory settings** in the Setup menu to restore the predefined factory settings, see p. 8.

Sound menu



```
MAIN MENU
PICTURE
FEATURES
PROGRAMMES

SOUND
Volume
Treble
Bass
Headphone volume
Delta volume
(Night mode)
```

The modified adjustments for Volume, Treble and Bass are automatically stored for all TV channels.
Select **Factory settings** in the Setup menu to restore the predefined factory settings, see p. 8.

Select **Surround settings** in the Sound menu.

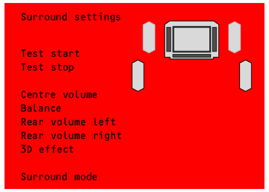
The contents of the Surround settings menu depends on the selected Surround modes.

Surround settings	Stereo	3D surround	Pro Logic	MPEG Multichannel (via a digital source)	Dolby Digital (via a digital source)	Dolby 3 Stereo	Hall
Test start	●	●	●	●	●	●	●
Test stop	●	●	●	●	●	●	●
Centre volume		●	●	●	●	●	
Balance	●	●	●	●	●	●	●
Rear volume left			●	●	●		●
Rear volume right			●	●	●		●
3D effect		●					
Surround mode	●	●	●	●	●	●	●

The graphical representation of the speakers is displayed on screen when controls are being changed or when in test tone mode.
The drawing on screen is updated according to the chosen loudspeaker setup and the selected surround mode.
Speakers which are active are highlighted.
In 3D surround mode the graphical representation of the rear loudspeakers is replaced by the symbol)) ((.
The menu item **3D effect** appears and the level of the 3D effect can be adjusted.

Note: if extra front speakers are connected and selected in the Sound Setup menu, all internal TV speakers produce centre sound. See Connect Peripheral Equipment, Extra loudspeakers/Amplifier, p. 30.

Adjustment of the volume level of the loudspeakers



```
Surround settings

Test start
Test stop

Centre volume
Balance
Rear volume left
Rear volume right
3D effect

Surround mode
```

The menu item **Test** enables you to have a reference of the internal and the rear loudspeakers loudness.

① Select **Test start** and press the **OK** key.
A steady noise tone is switched sequentially through the available loudspeakers, for 2 seconds each. This enables you to have a reference of the loudness of each loudspeaker and to adjust the level of each until they all sound equally loud.
The loudspeakers activated light up in the screen graphic.

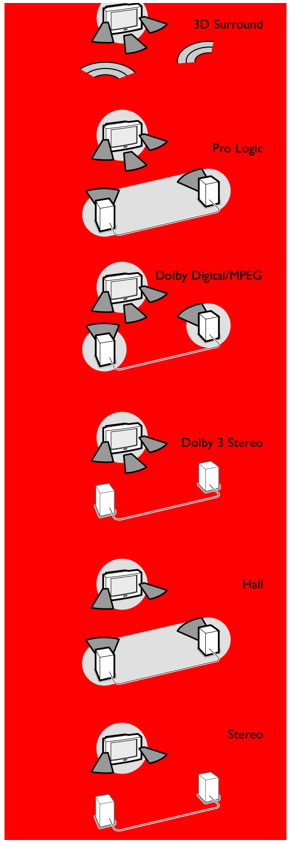
② Select **Centre volume**, **Balance**, **Rear volume left** or **right** and alter the selected adjustments.

③ Select **Test stop** and press the **OK** key when you have finished the adjustment of the speaker levels.

Headphone volume
See Connect Peripheral Equipment, p. 28 for the connection of the headphone.

Delta volume
Here you may adjust the volume differences of each selected TV channel or external device separately. This can compensate volume differences between different broadcasters.
Use the **- P +** keys to compare to the volume of other TV channels or externals.

Night mode *(only available with certain Dolby Digital sound sources)*
Select **Yes**, to reduce the dynamics of the sound and to improve listening at low volume.
This is useful for late-night listening, e.g. to a DVD disc.



Surround Modes
Select the Surround mode according to the sound mode being broadcast.

3D Surround (optimal with Dolby Surround broadcasting)
3D Surround enables you to experience the effect of Dolby Surround Pro Logic without the need of having rear speakers connected or activated.
With Dolby Digital or MPEG Multichannel an improved virtual effect is offered.
The graphical representation of the rear loudspeakers is replaced by the symbol)) ((.
Select the level of **3D effect** with the cursor left/right.

Pro Logic (with Dolby Surround broadcasting)
In addition to the left and right internal speakers, the centre and the rear surround loudspeakers reproduce the Dolby Surround Pro Logic sounds.
This sound is always present in the movie or programme marked with DD Dolby Surround.
This mode is especially recommended for such programmes or movies.
Dolby Pro Logic signals are also present on some DVD tracks.
Note: Normal stereo broadcast is not always encoded to produce a rear surround sound.

Dolby Digital* or MPEG Multichannel
When you have connected a DVD player or a Laser Disc player containing a Dolby Digital decoder (AC-3) or MPEG 2 decoder output (See Connecting Peripherals, Digital equipment, p. 29), you can enjoy Multichannel Surround Sound in your home when playing discs recorded in Dolby Digital or MPEG2.
In addition to the left and right internal speakers, the centre, the left and right rear surround loudspeakers and the subwoofer reproduce the Dolby Digital or Dolby MPEG 5-channel Surround sounds.
Select Dolby Digital or MPEG Multichannel Surround mode.

Dolby 3 Stereo (optimal with Dolby Surround broadcasting)
The sound signal is now distributed over the front left, the front right and the centre TV loudspeakers.
The rear loudspeakers do not produce any signal.

Hall
The special sound signal is distributed over the rear loudspeakers which creates a hall effect from the rear.
The centre loudspeaker does not reproduce any signal.
This mode is recommended when you wish to add surround sound to a broadcast which is not encoded Dolby Surround or to a mono signal.

Stereo
This mode reproduces only the left and right front sound signals.
You only hear a stereo sound if the broadcast which you are receiving is transmitted in stereo or nicam stereo.

* Manufactured under license from Dolby Laboratories. 'Dolby' 'Pro Logic' and the double-D symbol DD are trademarks of Dolby Laboratories.
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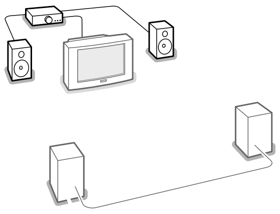
All rights reserved.



With two extra front loudspeakers connected

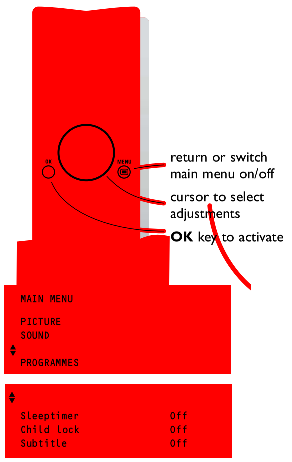
To enhance the sound reproduction of your TV you may connect two extra front loudspeakers via an external amplifier. See Connect Peripheral Equipment, Extra loudspeakers/Amplifier, p. 30
In the Surround modes, Hall and Stereo **(+ amp)** is added to indicate that you should switch on your amplifier as in these modes the internal TV speakers do not produce any sound.
The subwoofer output is muted.

Note: If extra front speakers are connected and selected, all internal TV speakers produce centre sound in the surround modes Pro Logic, Dolby 3 Stereo, Dolby Digital, and MPEG.

Press the ▣ key to return to the **SOUND** menu.

Dolby Digital sound reception info via the i+ key
Press the i+ key.
When Dolby Digital sound is reproduced, the sound info on screen displays the number of loudspeaker signals which are transmitted.
This is indicated by 2 numbers: the first one indicates the number of front loudspeaker signals, the second one the number of rear loudspeaker signals.
E.g. 'Dolby Digital 3/2' means that 3 front signals are transmitted: left, right and centre, and 2 rear signals: left and right surround.
'Dolby Digital 1/0' means that a mono signal is transmitted.
'Dolby Digital 2/0' means that the transmission contains a stereo signal which can be Dolby Pro Logic encoded.
In this case the surround mode will display Dolby Pro Logic.

Features menu



① Press the ▣ key to display/cancel the **MAIN MENU**.
② Use the cursor in the up/down directions to select the **FEATURES** menu.
③ Press the cursor right to activate the selected menu.
④ Use the cursor in the up/down directions to select a menu item.
⑤ Use the cursor in the left/right directions to select the desired setting.

Sleeptimer
With the sleeptimer you can set a time period after which the TV should switch itself to standby.
The counter runs from **Off** up to **180 min.**
One minute before the TV is set to go to standby, the remaining seconds appear on screen. Not visible in dual screen mode. You can always switch off your set earlier or change the set time.

Child lock
If the child lock is on, the TV can only be switched on with the remote control. The **P** - and + keys on top of the TV cannot be used to select a TV channel. In this way you can prevent unauthorised use of your TV.
If the message **Child lock On** appears, the child lock must be switched off before you can use the **P** - and + keys on top of the TV to select a TV channel.

Subtitle
TV channels with teletext often transmit certain programmes with subtitling. See Teletext, Continuous Subtitles, p. 26 how to select the proper subtitle page from the teletext index.
Select **Subtitle On** or **Off**.

Press the ▣ key to switch off the Features menu.

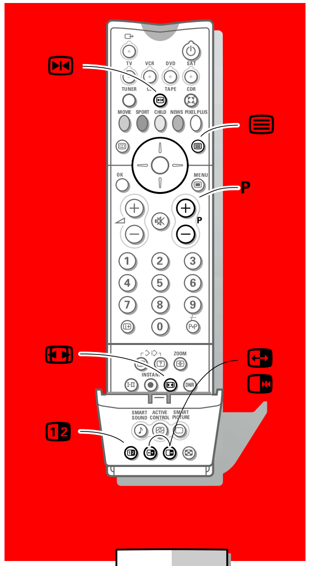
Programme list

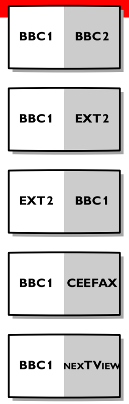
① Press the ▣ key to display/cancel the **MAIN MENU**.
② Select **PROGRAMMES** with the cursor up/down.
③ Press the cursor right to activate and to display an overview of all the TV channels installed.
④ Press the cursor up/down to run through the list and press **OK** to select the desired TV channel.

Press the ▣ key to switch off the Programme list.

Dual screen

Only for 32-36PW9767


⧓
☰
P
⧈
⊟
1|2
TV VCR DVD SAT
TUNER CD TAPE CDR
MOVIE SPORT CHILD NEWS PIXELPLUS
OK MENU
P
1 2 3 4 5 6 7 8 9 0
ZOOM
INSTAN
SMART SOUND ACTIVE CONTROL SMART PICTURE


BBC1 BBC2
BBC1 EXT2
EXT2 BBC1
BBC1 CEEFAX
BBC1 NEXTVIEW

① Press the 1|2 key to switch on Dual screen.
The TV screen is divided into 2 parts:
- the left side for the picture of the selected TV channel;
- the right side for the picture from the TV channel in the favourite programme list following on the selected TV channel.

② Press the ⧈ key under the door of the remote control to select a vertical squeezed or a non vertical squeezed picture size.

Select left and right pictures

① Press **+ P -** to run through the TV channels in the left picture.

② Press the cursor up/down to select the TV channels in the right picture. Also TV channels which are not in the favourite list may be selected.
Press the cursor left/right to select peripheral equipment connected to **EXT1**, **EXT2**, **EXT3**, **EXT4** or **FRONT**.
- *Selecting TV channels in the right picture with the cursor up/down is not possible when a menu is displayed on the screen.*
- *Programmes via a decoder/descrambler can not be reproduced in the right picture.*
- *The sound of the right picture can be heard via a headphone. Only programmes via a peripheral can be heard in stereo.*
- *Zooming is reset to 1x when Dual screen is switched on.*

Swapping screens

Press the ⇄ key to swap the right and left picture. The sound is swapped as well.

Select still picture

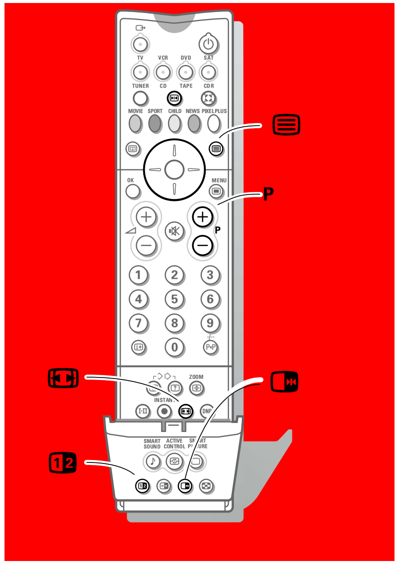
- Press the ⧓ key to freeze the left picture.
- Press the ⊟ key to freeze the right picture.

Possible Dual screen combinations

- TV channel/TV channel: see Select left and right pictures.
- TV channel/Peripheral: see Select left and right pictures.
- Peripheral/TV channel
  - Select the connection (**EXT1**, **EXT2**, **EXT3**, **EXT4** or **FRONT**) of the connected peripheral.
  - Press the 1|2 key.
- TV channel/Teletext
  - Press the ☰ key to display teletext of the selected TV channel.
  - Press the 1|2 key.
    To operate teletext, see p. 25.
    The **+ P -** keys can only be used to run through the teletext pages.
  - Press the ☰ key again to return to a full screen picture or press the 1|2 key again to return to a full teletext picture.
- TV channel/NEXTVIEW
  - Press the ▣ key to display NEXTVIEW.
    Press the 1|2 key.
    To operate NEXTVIEW, see p. 20
  - Press the ▣ key again to return to a full screen picture or press the 1|2 key again to return to a full NEXTVIEW picture.

Dual screen

Only for 28-32PW9617


☰
P
⧈
⊟
1|2
TV VCR DVD SAT
TUNER CD TAPE CDR
MOVIE SPORT CHILD NEWS PIXELPLUS
OK MENU
P
1 2 3 4 5 6 7 8 9 0
ZOOM
INSTAN
SMART SOUND ACTIVE CONTROL SMART PICTURE

① Press the 1|2 key to switch on Dual screen.
The TV screen is divided into 2 parts:
- the left side for the normal main picture,
- the right side for teletext broadcast by the selected TV channel or for NEXTVIEW.

To operate NEXTVIEW, see p. 20.
To operate teletext, see p. 25.

If Dual screen is **Off**, the picture, teletext or NEXTVIEW is displayed full screen.

② Press the ⧈ key under the door of the remote control to select a vertical squeezed or a non vertical squeezed picture size.

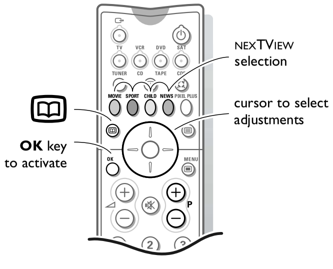
③ Press **+ P -**, digit keys or colour keys to run through the teletext pages.

④ Press the ☰ key to return to a full picture screen and to select another TV channel with the **+ P -** keys or with the digit keys.

Select still teletext picture

Press the ⊟ key to freeze the teletext picture.
The info in this page is not being updated by the teletext broadcaster.

NEXTVIEW / Teletext guide



In the Setup menu, p. 8 you were asked to select a NEXTVIEW provider. If the selected provider supports NEXTVIEW then the TV will automatically present the NEXTVIEW programme schedule. If the TV channel supports just teletext, then the TV will switch automatically to Teletext guide. Both facilities are offering the same functions: record, remind, info and watch. However in case of Teletext guide the broadcaster is responsible for the availability of these functions.

Some broadcasters provide information about their own programmes and sometimes other TV channels for one or more days. You can search for the programmes you want to watch up to 7 days in advance. It is also possible to search for a programme by theme, e.g. sport, movie, etc. Once a programme has been selected it can be tagged, to remind you, or to record on the video recorder automatically (provided the video recorder is equipped with NEXTVIEWLink), once, daily, weekly or series. Teletext guide/NEXTVIEW also allows direct access to detailed information about programmes if provided by the broadcaster.

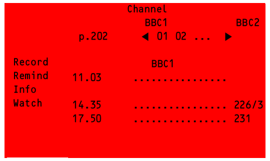
The broadcaster is responsible for the content of the information. The TV is responsible for the capture of that information and for the presentation to the user.

Use of the Teletext guide/NEXTVIEW menus

❶ Press the 🕮 key on the remote control to display/cancel the Teletext Guide/ NEXTVIEW menu.

❷ Use the cursor in the up/down, left/right directions to select the date, **DAY** for the daily guide and the time block (in steps of 15 minutes), **CHANNEL** for the channel guide, **THEME** for the theme guide, **OVERVIEW** for an overview of all the programmes which are marked as reminders or for recording, the programme guide page number or to enter the programme list.

Teletext guide



```
Channel
BBC1            BBC2
p.202   ◄ 01 02 ...  ►
Record          BBC1
Remind  11.03   ................
Info
Watch   14.35   ................ 226/3
        17.50   ................ 231
```

❸ Enter the proper programme guide page number with the digit keys or with the **– P +** keys.

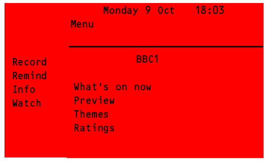
❹ Press the cursor left/right to run through the subpages.

❺ Select a programme with the cursor up/down.

❻ Press one of the colour keys to select one of the basic functions (if available); **record**, **remind**, **watch**, **info**. See Basic functions further on.

❼ Press the **OK** key to return to the header area again.

NEXTVIEW



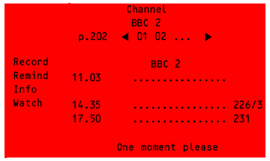
```
        Monday 9 Oct   18:03
Menu

Record          BBC1
Remind
Info    What's on now
Watch   Preview
        Themes
        Ratings
```

❸ Select a programme with the cursor up/down.

❹ Press one of the colour keys to select one of the basic functions (if available); **record**, **remind**, **watch**, **info**. See Basic functions further on.

❺ Press the **OK** key to return to the header area again.

Teletext guide



```
           Channel
            BBC 2
p.202   ◄ 01 02 ...  ►
Record         BBC 2
Remind  11.03  ................
Info
Watch   14.35  ................ 226/3
        17.50  ................ 231

          One moment please
```

TV channels which broadcast teletext also transmit a page with the programme guide of the day. For each selected TV channel the programme guide page can be selected with the 🕮 key:

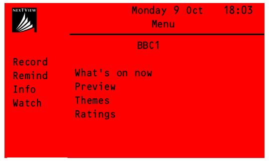
- automatically if the selected TV channel supports services like PDC (Programme Delivery Control) or MIP (Magazine Inventory Page).
- if automatic pre-selection is not possible then the index page is displayed and the proper programme guide page number of the selected TV channel has to be entered with the digit keys.

The programme guide page will be stored automatically only if it satisfies Video Programming via Teletext (VPT) requirements.

Every time you press the 🕮 key, the programme guide page of the selected TV channel will be available if the TV channel does not support NEXTVIEW.

The function items record, remind, info and watch, corresponding with the coloured keys, become highlighted if the displayed programme page satisfies the Video Programming via Teletext (VPT) requirements. Select a programme item and press one of the function keys, e.g. Record or Remind. See Basic functions further on. The Info item is enabled if the selected programme contains a page number with an optional subcode referring to a page with more info about the programme.

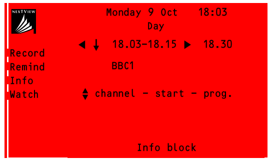
NEXTVIEW modes to sort and represent information



```
        Monday 9 Oct   18:03
             Menu
              BBC1
Record
Remind  What's on now
Info    Preview
Watch   Themes
        Ratings
```

Menu

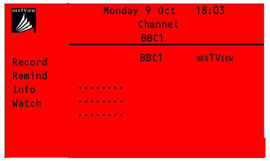
If in the Setup menu, see p. 8, you have selected a TV channel as NEXTVIEW provider which also supports NEXTVIEW, NEXTVIEW menu is displayed or can be selected. The selected TV channel is responsible for this menu. The NEXTVIEW menu appears when NEXTVIEW is switched on. Use the cursor up/down to select a menu item. Use the cursor right to select the menu item. While going through the menus, the TV is collecting the sorting criteria to finally display a list of programme events. The functions, in the left column, are shown at reduced brightness as long as the menu is displayed. If **None** has been selected as NEXTVIEW provider in the Setup menu, the broadcaster's defined menu will not be available.



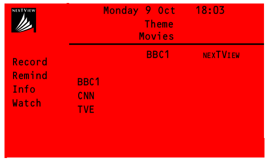
```
        Monday 9 Oct   18:03
              Day
Record  ◄ ↓  18.03-18.15 ►  18.30
Remind       BBC1
Info
Watch   ⇕ channel - start - prog.


             Info block
```

Day

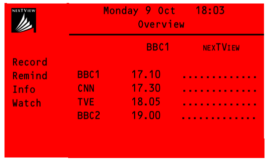
The day guide provides an overview of all programme titles active in the selected time block. Time blocks are 15 minute intervals starting from the current time of the current day. The default order is based on the programme list of the favourite TV channels as stored in the installation of the TV. TV channels not marked as favourite TV channels will not appear. Default NEXTVIEW opens with the day screen if the broadcast does not have its own menu.


Monday 9 Oct 18:03
Channel
BBC1
Record
Remind
Info
Watch
BBC1 NEXTVIEW
....
....
....

Channel
The Channel guide provides an overview of all programmes that are broadcast by a single channel during one day.
Previous programmes can be made visible via cursor up.
The list will start with the earliest broadcast programme.
With cursor left/right another favourite TV channel can be selected.


Monday 9 Oct 18:03
Theme
Movies
Record
Remind
Info
Watch
BBC1 NEXTVIEW
BBC1
CNN
TVE

Theme
The theme guide displays a list of all programmes at the selected date, that matches with the selected category (news, sport, culture, movies, …).
The default starting item will be the current or next programme on the current TV channel.
The **THEME** selection is only present if programmes in the TV guide have defined themes.

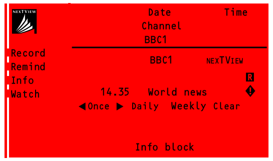

Monday 9 Oct 18:03
Overview
Record
Remind
Info
Watch
BBC1 NEXTVIEW
BBC1 17.10 ....
CNN 17.30 ....
TVE 18.05 ....
BBC2 19.00 ....

Overview
The Overview menu provides a list of programmes that are marked as reminders and those that have to be recorded.
When more than one programme to be recorded has an overlap in time, these programmes will be marked by a red colour.

After the programme has been broadcast, all items set for once will be deleted from the list the following day. This menu can be used to change a reminder or programmes to be recorded.

Note: the TV will automatically interpret the broadcast time (as shown on the teletext guide) of your selected programme into the correct local time and date.

Basic functions


Date Time
Channel
BBC1
Record
Remind
Info
Watch
BBC1 NEXTVIEW
R
14.35 World news ◆
◀Once ▶ Daily Weekly Clear
Info block

The functions Record, Remind, Info and Watch can be activated with the corresponding colour keys on the remote control.
If the function is not available, then the text is shown at reduced brightness.
Select a programme with the cursor up/down.

Record R or Remind ◆

① Press the red colour key to activate **Record** or the green colour key to activate **Remind.**
If the programme number of the broadcaster is not yet known, a message appears with the request to input the correct programme number with the cursor left/right and press OK.
A small menu pops up in which you can choose the interval: once, daily or weekly, or clear an earlier made record or remind setting. The default interval is set to **Once**. If a programme is an episode of a series, it is identified by the system and the options **daily** and **weekly** are replaced by the option **series**. In this case the system identifies when the next episode of the series will be broadcast. This is not possible in the Teletext guide.

② Use the cursor in the left/right directions to select the interval.
The colour of the tag refers to the interval.

③ Press the **OK** key.

When **Record** R is activated:
Storing appears to indicate the video recorder is programmed.
When **Remind** ◆ is activated:
- a message will appear on the screen the moment the tagged programme with ◆ starts, when watching the TV later on.
- the TV switches on the moment the tagged programme with ◆ starts, when the TV is in standby.

Note: Recordings and reminders are not possible when the broadcaster does not transmit dates and times of the programmes.
*The message **No TV programming possible** appears.*
Make sure you are on the TV programming page.

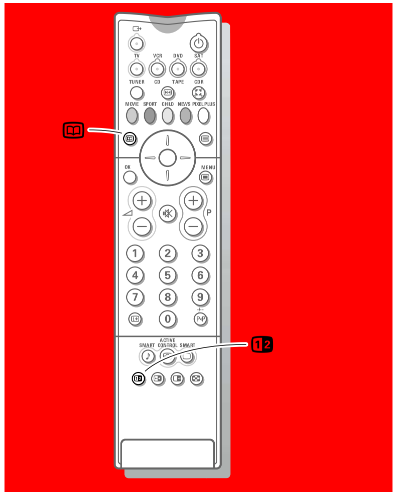
Info

① Press the yellow colour key to activate **Info**.
Advertisements or information relating to the selected programme are displayed. In some cases all of the information does not fit on the screen. Use the cursor up/down to browse through all of the information.

② Press the yellow colour key again to switch off the information.

Watch
Press the blue colour key to activate **Watch**.
This function is only available if a currently broadcast programme is selected. Otherwise the function is not available.
The selection causes the TV to tune to the selected TV channel. NEXTVIEW is switched off.

Select Picture/NEXTVIEW-Teletext Guide



Press the 📖 key.
Press the 12 key.
The screen is divided into two parts: the left side for the normal main picture, the right side for NEXTVIEW/Teletext Guide.
Press the 12 key to return to a full NEXTVIEW/Teletext guide screen and press the 📖 key to return to a full picture screen.

Acquisition and updating of NEXTVIEW info

Acquisition and updating of NEXTVIEW is done when you are watching the TV channel of the selected NEXTVIEW provider, see Setup menu p. 8, or when the TV is switched to standby.
The indicator on the front of the TV remains orange during standby.
After all needed acquisition or updating is complete, it turns red.
Acquisition of fresh data will happen once during the night.

Note: it may be necessary to put the TV in standby mode when all NEXTVIEW information is outdated, e.g. returning from holiday.

Video recorder restrictions with NEXTVIEW

The **Record** item and the automatic recording will only be present and possible if your video recorder is equipped with NEXTVIEWLink.
Your video recorder should be connected to **EXTERNAL 2**. See Connect Peripheral Equipment, p. 27.

The daily, weekly and series options, the number of recordings set and the way overlapping recordings are managed, depend on the type of video recorder you have. When all video recorder timers are full, **No free record timer** appears on the screen.

Upload video recorder overview.
When the TV is switched on, the timer recordings are uploaded to the TV to check if any manual addition or deletions have been done. This is shown in the overview. The video recorder manages and removes timer recordings when performed.

Some NEXTVIEWLink video recorders do not allow a daily programming of the recording to start on a Saturday or Sunday. In this case the item **daily** will be removed from the menu on those days.

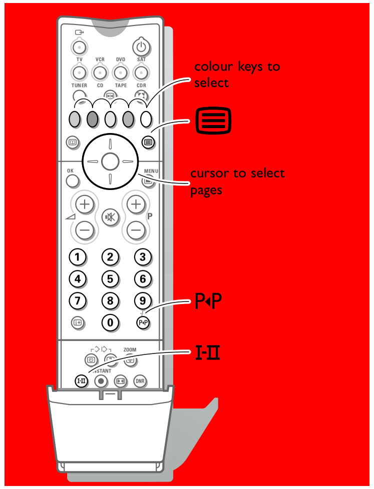
Most TV channels broadcast information via teletext.
Each channel which broadcasts teletext transmits a page with information on how to use its teletext system. Look for the teletext page with the main index (usually p. 100).
Depending on the TV channel, teletext is transmitted in different systems.
The colours used in the options line correspond with the colour keys of your remote control.

About Easy Text

Easy Text considerably reduces the waiting time (on condition that the teletext broadcast of the particular TV channel is received for at least half a minute) by :

- a direct selection of previous and following pages which are in transmission and of the pages referred to in the options line
- a habit watcher list: frequently used pages are put automatically in a list of preferred pages, so that they are immediately available
- the precapturing of the page numbers referred to in the displayed page
- the precapturing of all the subpages.

Switch Teletext on and off



Press ≡ to switch the teletext on or off.
The main index page appears on the screen together with two information lines at the top and one option line at the bottom of the screen.

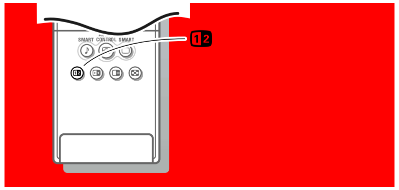
Remark: if the displayed teletext characters on screen do not correspond with the characters used in your language, press the I-II *key, under the door of the remote control, repeatedly to select language group 1 or 2.*

Select a Teletext page

With the digit keys
Enter the desired page number with the digit keys.
The page counter seeks the page or the page appears immediately when the page number has been stored in the memory.
A message appears when you have entered a non existent or incorrect page number. Page numbers beginning with 0 or 9 do not exist. Choose another number.

With the option line
Select with the colour keys, corresponding to the coloured options at the bottom of the screen, the desired subject.

Select Picture/Teletext



Select a TV channel which broadcasts teletext.
Press the ≡ key.
Press the 12 key.
The screen is divided into two parts:
the left side for the normal main picture,
the right side for teletext broadcast by the selected TV channel.
Press the ≡ key to return to a full screen picture or press the 12 key to return to a full teletext picture.

Quickly run through the teletext pages

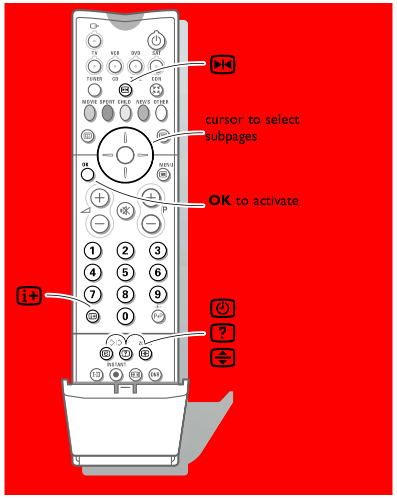
Press the cursor up/down or the **- P +** keys to run through the previous or the following pages.

Select the previously selected txt page

Press the P◂P key.

Select the index teletext page

Press the grey colour key to display the main index (usually p.100).



Only for T.O.P teletext broadcasts :
T.O.P orders the pages in categories and adds other possibilities of enhancing ease of use.
Press i+. A T.O.P. overview of the teletext subjects available is displayed.
Not all TV channels broadcast T.O.P. teletext. When the teletext system
is not T.O.P. teletext, a message appears at the top of the screen.
Select with the cursor up/down, left/right the desired subject and press the **OK** key.

Select subpages

When a selected teletext page consists of different subpages, one of the subpages appears on the screen. The coloured number in the first information line refers to the displayed subpage.
The other subpages can be selected in 2 ways :

With the cursor left/right
The other subpage numbers appear in white as soon as the transmission has found them. They are stored in the memory so that they are available while the teletext page is on screen.
Select with the cursor left/right the previous or the following subpage.

With the ⊙ key
- Enter the subpage number yourself:
Press ⊙. Enter the desired subpage with the digit keys : e.g. 3 for the third page of seven subpages.
The TV searches for the selected subpage.

- Automatically rotating subpages:
Press ⊙ again to cancel the entered digit key for the subpage.
Now the subpages rotate automatically.

Press ⊙ again to select the subpages with the cursor left/right again.

Special teletext functions

Hold
Press ⧓ to stop the automatically rotating of the subpages or to stop the page counter from seeking when you have entered a wrong page number or when the page is not available.
Enter another page number.

Enlarge
Press ⇕ repeatedly to display the upper part, the lower part and then to return to the normal page size. When the upper part is displayed, you can scroll the text, line by line using the cursor up/down.

Reveal
Press ? to reveal/conceal the hidden information, such as solutions to riddles and puzzles.

Select Continuous Subtitles

TV channels with teletext often transmit programmes with subtitling. For each TV channel you can store a subtitle page which will be displayed continuously if the programme being broadcast is transmitted with subtitles.

Switch on teletext and select the proper subtitle page from the index.
Switch off teletext.
Now the subtitle page is stored for the selected TV channel.

Once subtitles have been stored and **Subtitle On** has been selected they will automatically be displayed on the selected TV channel if subtitles are in the transmission. Select **Subtitle On** or **Off** in the Features menu, see p. 17.
The subtitle symbol ▭ appears when **Subtitle On** is selected.

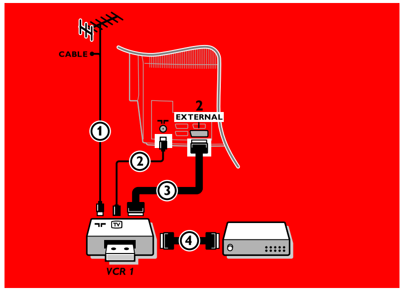
Remark: you are in teletext mode, so only teletext functions are available.

Connect Peripheral Equipment

There is a wide range of audio and video equipment that can be connected to your TV.
The following connection diagrams show you how to connect them.

Video recorder

Connect the aerial cables ①, ② and, to obtain the optimum picture quality, eurocable ③ as shown below.



If your video recorder is provided with the EasyLink function, the eurocable supplied with it should be connected to **EXTERNAL 2** *to benefit from the EasyLink functionality.*

If the eurocable ③ is not used the following steps are required:

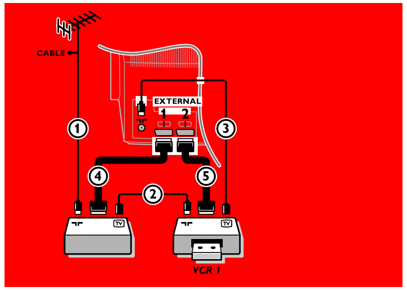
Search for and store the test signal of the video recorder

1. Unplug the aerial cable ① from the aerial socket ⊤ of your video recorder.
2. Switch on your TV and put the video recorder on the test signal. (See the handbook for your video recorder.)
3. Search for the test signal of your video recorder in the same way as you searched for and stored the TV signals. See Installation, Searching for and storing TV channels, Manual Installation, p. 6.
4. Store the test signal under programme number 0 or between 90 and 99.
5. Replace the aerial cable in the aerial socket ⊤ of your video recorder after you have stored the test signal.

Decoder and video recorder
Connect a eurocable ④ to your decoder and to the special euroconnector of your video recorder. See also the video recorder handbook.
See Define Decoder/Descrambler prog. numbers, p. 8.
You can also connect your decoder directly to **EXTERNAL 1** or **2** with a eurocable.

Video recorder and other equipment

(except Digital Sources)

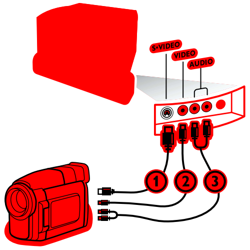


1. Connect the aerial cables ①, ② and ③ as shown. Better picture quality can be obtained if you also connect eurocable ⑤ to **EXTERNAL 2** and a eurocable ④ to **EXTERNAL 1, 3** or **4.**
2. Look for the test signal of your peripheral in the same way as you do for a video recorder.

When a video recorder is connected to EXTERNAL 1 you can only record a programme from your TV.
Only when a video recorder is connected to EXTERNAL 2 it is possible to record a programme from your TV as well as from other connected equipment. See Record with your video recorder, p. 33.

Note: EXTERNAL 1 can handle CVBS and RGB, EXTERNAL 2 CVBS, Y/C and RGB, EXTERNAL 3 and 4 only CVBS.
It is preferred to connect peripherals with RGB output to EXTERNAL 1 or 2 as RGB provides a better picture quality.

Camera & camcorder

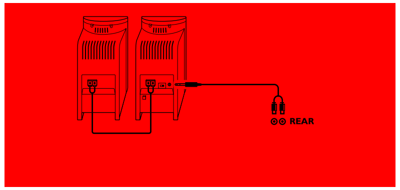


1. Connect your camera or camcorder to sockets at the right side of your TV.
2. Connect the equipment to **VIDEO** ② and **AUDIO L** ③ for mono equipment.
Press the I-II key repeatedly to select the sound coming from one or both loudspeakers of your TV.
3. For stereo equipment also connect **AUDIO R** ③.

S-VHS quality with an S-VHS camcorder is obtained by connecting the S-VHS cables with the **S-VIDEO** input ① and **AUDIO** inputs ③.

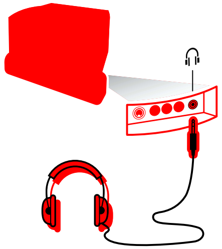
Warning: Do not connect cable ① and ② at the same time. This may cause picture distortion !

Wired rear loudspeakers



When no wireless RF surround sound is possible or when there is too much interference you can still enjoy Dolby Pro Logic and Dolby Digital surround sound by connecting the two rear loudspeakers to the TV with a stereo cinch to stereo 3,5 mm jack cable.
Connect the (not supplied) cable with the **PRE-AMP IN (TV)** connector at the back of the active surround loudspeaker and with the black and red **REAR R** or **L** outputs at the back of the TV.

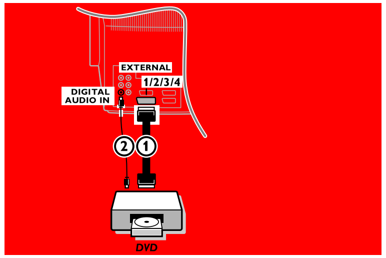
Headphone



1. Insert the plug into the headphone socket 🎧 at the right side of the TV.
2. Press 🔇 on the remote control to switch off the internal loudspeakers of the TV.
The headphone impedance must be between 8 and 4000 Ohm. The headphone socket has a 3.5 mm jack.

In the **SOUND** menu select **Headphone volume** to adjust the headphone volume.

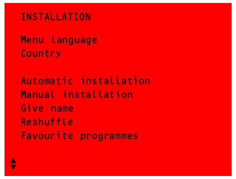
Digital equipment (DVD, digital Set Top Box,...)



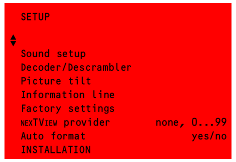
Connect your digital equipment with a eurocable ① to one of the euroconnectors (**EXT1**, **EXT2**, **EXT3** or **EXT4**), or with a cinch cable to the **VIDEO** input at the right side of the TV (see illustration above).

For digital sources with a Dolby Digital (AC-3)/MPEG2 audio output also connect an audio cable ② to the **DIGITAL AUDIO IN** socket of your TV to enjoy MultiChannel surround sound. This is only valid when you have connected your digital equipment to **EXT1**.

1. Press ◷ and ? at the same time.



```
INSTALLATION

Menu language
Country

Automatic installation
Manual installation
Give name
Reshuffle
Favourite programmes

⬍
```



```
SETUP

⬍

Sound setup
Decoder/Descrambler
Picture tilt
Information line
Factory settings
NEXTVIEW provider          none, 0...99
Auto format                      yes/no
INSTALLATION
```

2. Select **Digital sources** in the Setup menu of the **INSTALLATION** menu and select:
   - **None** if you have no digital source connected,
   - **EXT1, EXT2, EXT3** or **EXT4** if you have connected your equipment to a euroconnector,
   - **EXT1 + Dig. Audio** if you have connected your digital equipment with a Dolby Digital/MPEG2 audio output to **EXT1** and to the **DIGITAL AUDIO IN** socket,
   - **EXT1, 2, 3** or **4 + Dig. STB** if you have connected your Digital Set Top Box to one of the euroconnectors,
   - **FRONT** in case you connected your equipment to the right side of the TV,
3. Press the ▣ key to switch off all menus.

Note: When you have connected a digital source + Digital audio to ***EXT1*** *and a digital STB to one of the other externals*

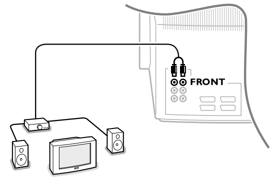
1. *Always select* ***EXT1 + Dig. Audio*** *in the Digital sources menu.*
2. *When you want to watch digital broadcasts via your Set Top Box, use the ⇥ key on the remote control, to select the external where the STB has been connected.*
In case of poor digital transmission, select the with the ***Multimedia*** *setting using the Smart Picture ▢ key, without changing the picture settings manually.*

Other equipment

Other equipment can be connected to one of the remaining euroconnectors.

Connect Extra loudspeakers / Amplifier

Stereo amplifier and two extra FRONT speakers
To enhance the sound reproduction of your TV you can connect two extra speakers via an external amplifier.



① Connect the audio cables to the audio input of your amplifier and to **AUDIO FRONT L** and **R** at the back of your TV. The output level is controlled by the volume control of your TV.
Note: Switch off the TV and your audio amplifier before connecting them. Set the audio amplifier's volume to minimum.

② Select **Extra front speakers Yes (Amp)** in the Sound Setup menu. See p. 9.
See Surround settings, p. 15 for the available Surround modes.

③ Adjust the volume of the audio amplifier.
You may make use of the Test tone function in the Surround Settings menu, see p. 14, to have a reference of the loudness of the separate loudspeakers.
Note: Once you have adjusted the volume of the amplifier, do not change it while watching TV as the whole configuration operates with the volume adjustment of your TV.

Dolby Pro Logic Surround amplifier
Although your TV is already equipped with a Digital Multichannel decoder you might want to connect your own Dolby Surround amplifier.

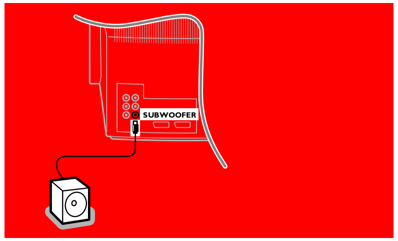
① Connect the Dolby Pro Logic Surround amplifier to the **AUDIO FRONT L** and **R** at the back of your TV.

② Select **Extra front speakers No** in the Sound Setup menu. See p. 9.
The audio output is now independent of volume, treble, bass and surround settings.

③ Switch off the volume of the TV with the mute key 🔇.
All volume settings, tone control and speaker connections have to be done via the external Dolby Pro Logic amplifier.

Attention: the sound info on screen will not correspond with the actual sound reproduction. You will not be able to reproduce multichannel Dolby Digital or wireless surround sound through the AUDIO L and R output of your TV.

Connect extra subwoofer



To enhance the sound reproduction of your TV you can connect an externally powered subwoofer.
Connect the audio cable to the **SUBWOOFER OUT** socket of your TV and to the **SUBWOOFER IN** socket of the subwoofer.
The volume of the subwoofer is controlled by the TV. The subwoofer output is muted when the **Extra front speakers** menu item in the Sound Setup menu, p. 9, is switched to **Yes**.
For details, please refer to the subwoofer's manual.

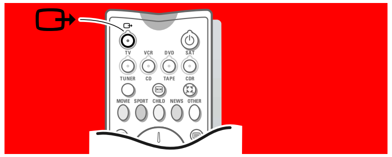
If you want to connect more equipment to your TV, consult your dealer.

To select connected equipment

If the TV is connected to a video recorder with the EasyLink function, in some cases the TV will be switched on, even when it was in standby. (E.g. playback tape,...)
This is not possible when Child Lock On is selected.

Equipment connected with an aerial cable only :
Select the programme number under which you have stored the test signal with the digit keys.

Equipment connected to a euroconnector or to the right side of the TV

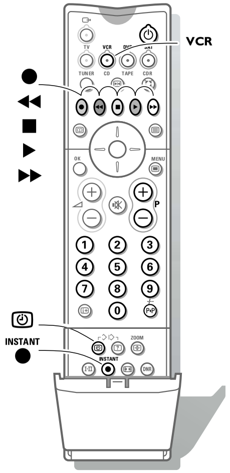


Press the ⇥ key repeatedly to select **EXT1**, **EXT2**, **EXT3**, **EXT4** or **FRONT**, according to where you connected your equipment at the back or the right side of your TV.
Remark : Most equipment (decoder, video recorder, satellite receiver) carries out the switching itself.

If you want to change to TV channels?
Enter the programme number of the TV channel which you want to watch with the digit keys or press the **TV** key.

Audio- and video equipment keys

Most of the audio and video equipment from our range of products can be operated with the remote control of your TV.



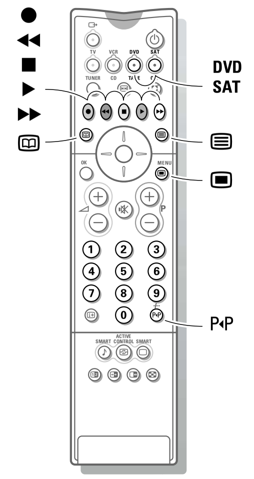
Press the **VCR**, **DVD**, **SAT**, **TUNER**, **CD**, **TAPE** or **CDR** key according to the equipment you want to operate with this remote control. See Use of the remote control, p. 10.

Video recorder
Press one of the video recorder keys after you pressed the **VCR** key:

●	for record,
◀◀	for rewind,
■	for stop,
▶	for play,
▶▶	for fast forward,
-/--	for selecting 1- or 2-digit programme numbers from the videorecorder,
- P +	for sequential programme selection from the video recorder tuner,
0 to 9	to select a programme number from your video recorder tuner,
⏻	to switch the video recorder to standby
⏲	VCR timer

These keys function with equipment which use the RC5 signalling standard.

If your video recorder has the EasyLink function, the key **INSTANT** ● *for recording, under the door of the remote control, can be operated in the TV mode.*
If your EasyLink video recorder has the system standby function, when you press the ⏻ key for 3 seconds, both TV and the video recorder are switched to standby.



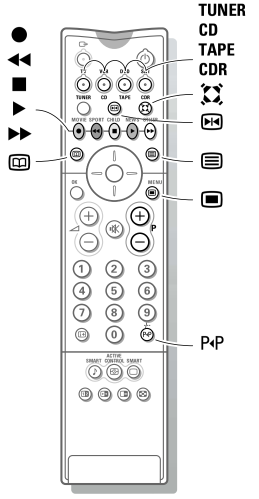
DVD keys
Press one of the following keys after you have pressed the **DVD** key.

▣	to switch the DVD menu on or off
P◂P	to select a DVD chapter
▤	to select a DVD title
▥	to select your choice of subtitle language
●	pause
◀◀	to search down
■	stop
▶	play
▶▶	to search forward
0-9	to select a programme number from your DVD
OK	to enter the selected menu item

These keys function with equipment which use the RC6 signalling standard and with Philips DVD players.

Satellite receiver keys
Press one of the TV keys after you have pressed the **SAT** key.

These keys function with equipment which use the RC5 signalling standard.



Tuner, CD, Tape and CDR keys
Press one of the following keys after you have pressed the **TUNER**, **CD**,
TAPE or **CDR** key.

▣	to switch the menu on or off (tuner)
P◂P	to select a frequency (tuner)
●	to record
◀◀	to search down (tuner); rewind (CD/tape); speed down (CDR)
■	stop
▶	play
▶▶	to search up (tuner); forward (CD/tape); speed up (CDR)
▤	RDS display (tuner); info on screen (CD/CDR)
▥	RDS news/TA (tuner); disc increment (CD/CDR)
⧓	pause (CD/CDR/tape)
⛶	surround modes (CD/CDR/tape)
+ P -	next/previous (CD)

Record with your video recorder without EasyLink

To record S-VHS quality, connect an S-VHS peripheral directly to the video recorder.

Record a TV programme

❶ Select the programme number on your video recorder.

❷ Set your video recorder to record.
See the handbook for your video recorder.

Switching programme numbers on your TV does not disturb recording !

Record a programme on your video recorder connected to EXTERNAL 2 from Audio/Video equipment connected to EXTERNAL 1, EXTERNAL 3, EXTERNAL 4 or to sockets on the right side of the TV

❶ Switch on the equipment.

❷ Select the right external on your video recorder.

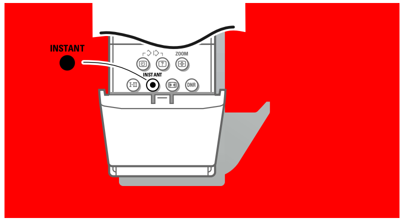
❸ Set your video recorder to record.
You record what you are watching on the screen.

Do not switch programme numbers or do not switch off your TV when you are recording !

Record with your video recorder with EasyLink

If you have connected an S-VHS video recorder provided with the EasyLink function, you can record S-VHS quality from an S-VHS peripheral connected to the right side of the TV. (E.g. from an S-VHS camcorder.)

In TV mode, it is possible to start a direct recording of the programme which is being displayed on the TV screen.
Press the **INSTANT** ● *record key, under the door of the remote control.*



The video recorder switches on from standby and a message of what is being recorded appears on the screen.
The video recorder starts recording the programme you are watching.
Switching programme numbers on your TV does not disturb recording !

When recording a programme from a peripheral connected to EXTERNAL 1, 3, 4 or FRONT, you can not select another TV programme on the screen.
To watch TV programmes again, press the programme number you want to select twice.
Attention: the recording is stopped and your video recorder switches to standby.

If you switch to standby during recording of a programme from a peripheral connected to EXTERNAL 1, 3, 4 or FRONT, the blinking lamp on the front of your TV indicates that you are still recording. The blinking stops after the recording is finished.

Record with your video recorder with NEXTVIEWLink

If your video recorder is equipped with NEXTVIEWLink, and you tagged one or more programmes to be recorded automatically in the NEXTVIEW mode, it is not necessary for the TV to be in the standby mode or switched on for the recording to start.

Tips

Care of the screen
Clean the TV with a slightly damp soft cloth. Do not use abrasive solvent as it can damage the TV screen.

Mobile telephone warning !
To avoid disturbances in picture and sound, malfunctioning of your TV or even damage to the TV, keep away your mobile telephone from the TV.

Poor Picture

- Have you selected the correct TV system?
- Is your TV or house aerial located too close to loudspeakers, non-earthed audio equipment or neon lights, etc.?
- Mountains or high buildings can cause double pictures or ghost images. Sometimes you can improve the picture quality by changing the direction of the aerial.
- Is the picture or teletext unrecognisable? Check if you have entered the correct frequency. See Installation, p. 6.
- Are brightness, sharpness and contrast out of adjustment? Select Factory settings in the Setup menu, p. 8.
- Sometimes poor picture quality is possible when having activated an S-VHS camera or camcorder connected to the right side of your TV and another peripheral is connected to **EXT1**, **EXT2**, **EXT3** or **EXT4** at the same time. In this case switch off one of the other peripherals.

No picture

- Is the aerial connected properly?
- Are the plugs tightly connected in the aerial socket?
- Is the aerial cable in good condition and does it have suitable plugs?
- Are the connection facilities to a possible second TV in good condition? If in doubt, consult your dealer.

No sound

- No sound on any channel? Check the volume isn't at minimum.
- Is the sound interrupted with the mute key 🔇? Check if your speaker configuration corresponds with the selections made in the Sound Setup menu, p. 9. E.g. is your amplifier switched on when you have 2 extra front speakers connected?
- No sound from the rear speakers or the centre speakers? Select an appropriate surround mode, according to the broadcasted sound signal or adjust the volume or check if the wireless transmitter is properly connected. See Surround Modes, p. 15.
- In case you connected digital equipment with a digital audio connection you have to select **EXT1 + dig. audio** in the Sound Setup, Digital sources, p. 29 to reproduce sound.

Remote control

- If your TV no longer responds to the remote control, the batteries may be dead or the wrong mode (TV or other peripheral, see p. 3) is selected.
- You can still use the **M** key and the -/+ keys at the top of your TV.

Menu
Have you selected the wrong menu? Press the same key again to exit from the menu.

NEXTVIEW - No information
See Acquisition and updating of NEXTVIEW information, p. 24.

NEXTVIEW - Displayed time is wrong
The broadcaster on programme number one does not transmit the correct local date en time. Use **Reshuffle** in the **INSTALLATION** menu to place another broadcaster on programme number one.

Wireless Surround speaker system

- Are the active surround speaker and the Surround Sound setting in the Setup menu switched to the same transmitting channel?
- External RF equipment, mobile telephones or people moving around close to the TV may disturb the sound transmission.
- When no RF surround sound is possible, or when there is too much interference, try to switch to another wireless channel or use the wired back up solution. See Install Sound Setup, p. 9.
- When you switch to another wireless channel, take care to select the same transmitting channel as well in the setup menu as on the speaker box.
- For wireless transmitter modules with a built in antenna: direct the antenna to achieve the best reception.

No solution
Switch your TV off and then on again once.

Never attempt to repair a defective TV yourself.
Check with your dealer or call a TV technician.

End of life directives
Philips is paying a lot of attention to producing environmentally-friendly in green focal areas. Your new TV contains materials which can be recycled and reused. At the end of its life specialised companies can dismantle the discarded TV to concentrate the reusable materials and to minimise the amount of materials to be disposed of.
Please ensure you dispose of your old TV according to local regulations.

How to dispose of dead batteries?
The batteries supplied do not contain the heavy metals mercury and cadmium. Nevertheless in many countries dead batteries may not be disposed of with your household waste. Please ensure you dispose of dead batteries according to local regulations.

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Glossary

100 Hz Digital Scan
If you look at a television screen you will see small imperfections in the picture caused by line vibration. Digital Scan (an internal process) removes interline flicker. When combined with 100 Hz, you will see a totally stable image.

Automatic Channel Installation (ACI)
Automatically installs all TV channels in the same order as offered by your cable company, provided of course that the data is transmitted. It also automatically includes programme number and programme name. With ACI, channel installation is fully automatic, simple and fast.

Child Lock
Feature to prevent unauthorised use of your TV.

Digital Natural Motion
100 Hz Digital Natural Motion eliminates the juddering effect that is noticeable when there are moving objects in the picture. This results in razor sharp pictures and ensures smooth movements.

DNR
Digital Noise Reduction.
By encoding signals digitally in 100 Hz sets, it is possible to clean up picture noise. This is especially beneficial in poor signal areas and when viewing poor quality video tapes.

Dolby Digital
The audience is completely surrounded by the sound. Both the left/right/centre and subwoofer speakers and the surround speakers are driven by the digitally processed sound system of the TV.
The Dolby Digital sound contains 6 independent digital channels which results in a CD sound performance from both the front and rear sound channels.

Dolby Surround Pro Logic
Literally wraps you in 4-channel sound. it brings your favourite movies to life with all the realism and impact of cinema sound as though you are part of the action.

Easy Link
Digital 'intelligent' ESI bus-system between TV and VCR (Scart connection required). Turns source selection and control into a one-button operation.

Easy Text
Teletext memory that automatically memorises Teletext pages and gives you instant access to them.

Euroconnector
A 21-pin connector system enabling you to simply connect various types of audio/video and computer equipment.

Menu
On-screen display of functions and facilities in a well-organised survey, which you can select using your remote control.

NEXTVIEW
NEXTVIEW is a new feature to assist the TV and VCR user in selecting the programmes she or he likes to watch from a television programme guide on the screen.
It enables the user to see a description of every programme, and mark interesting programmes to be reminded (auto TV on) or recorded (NEXTVIEWLink video recorder required).

NTSC
The broadcasting system used in the USA, Japan and parts of South America and Southeast-Asia.

Smart Picture and Sound Controls
Keys on the remote control to select predefined picture and sound settings.

Sleeptimer
Function with which you can set a time period after which the TV should switch itself to standby.

Picture Freeze
TV mode which allows you to "freeze" a certain image in order to study a specific detail at ease, e.g. to make notes of certain programme information like phone numbers.

Teletext
See also Easy Text
WST: World Standard Teletext.
FLOF: Full Level one Features. System applied by the BBC, RVE.... that provides a fast access to the teletext pages.
TOP: Table of (Teletext) Pages. German system for an easy access to the teletext pages.

Tint
TV-function to modify the general colour balance between cool and warm and to adjust it according to your personal preference.

4. Mechanical Instructions

Index of this chapter:
1. Set Disassembly
2. Service Positions
3. Board Removal
4. Set Reassembly

Note: Figures below can deviate slightly from the actual situation, due to different set executions.

4.1 Set Disassembly

Follow the disassemble instructions in described order.

4.1.1 Wireless Surround Transmitter Removal (if attached)

Transmitter module

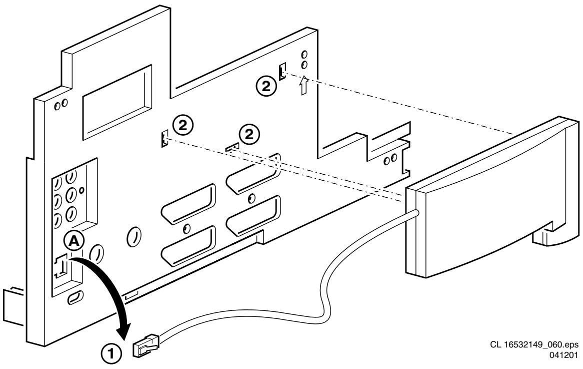

Figure 4-1

1. Remove the cable [1] of the Wireless Surround Transmitter box (at the left side of this RJ45 plug you can find the release-hook of the lock-mechanism).
2. Pull the Wireless Surround Transmitter box backwards. It is clicked to the rear cover via three clamps [2].

4.1.2 Rear Cover Removal

Rear view

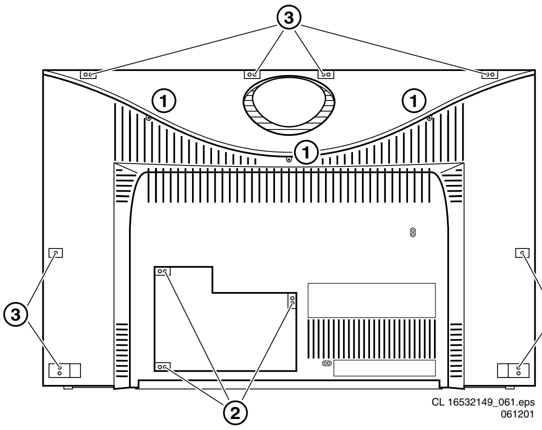

Figure 4-2

Warning: disconnect the mains power cord before you remove the rear cover.

First, remove the top cover (= plate with 'saucer'):
1. Remove the three fixation screws [1] that hold the cover plate.
2. Pull the cover (horizontally) backwards.

To be able to access the electronics of the set, you must remove the rear cover:
1. Remove the three remaining fixation screws [2] of the I/O-cover plate.
2. Remove the remaining fixation screws [3] at the two sides and the top of the rear cover.
3. Now remove the rear cover. Make sure that wires and cables are not damaged during cover removal.

4.1.3 I/O Cover Plate Removal

Cover plate

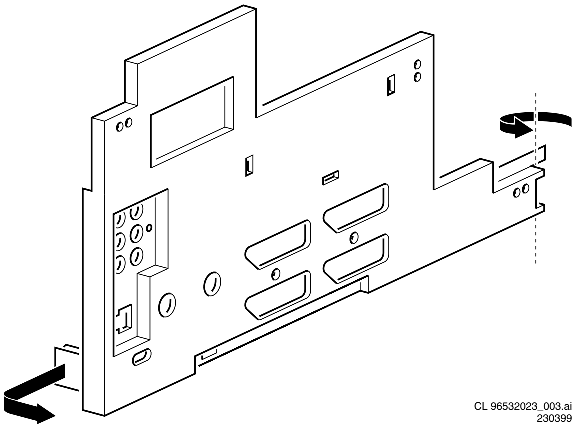

Figure 4-3

It is rather easy to remove the I/O-cover plate:
1. Release the hook on the left side (pull slightly outwards).
2. Now remove the plate (it hinges at the right side).

4.1.4 Sub-woofer Removal

How to remove the sub-woofer:
1. Disconnect the loudspeaker cable at the top of the sub-woofer box.
2. The subwoofer has two rubber feet at the bottom. Behind them, there is a snap hook. Release this hook (pull backwards), and at the same time pull the sub-woofer box upwards.
3. Now remove the sub-woofer.

4.1.5 DAF-module Removal

DAF-bracket

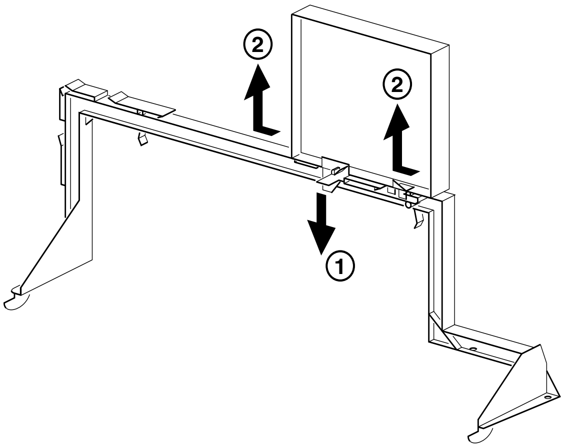

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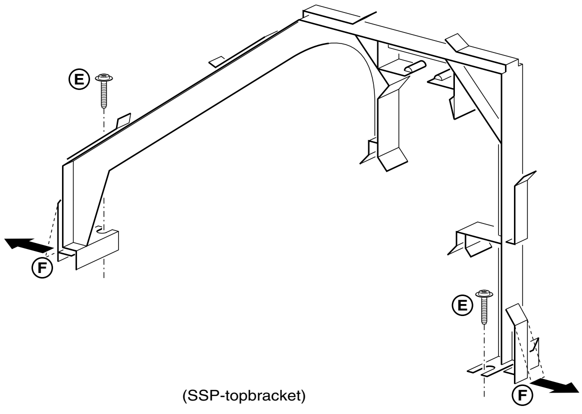
Figure 4-4

How to remove the DAF-module:
1. Press down the snap hook [1].
2. At the same time, slide the complete DAF-module to the left
   Caution: be very careful not to damage the CRT while doing this!.
3. Now lift the module from the LSP top bracket.

4.1.6 Support Brackets Removal

SSP support bracket



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210499

Figure 4-5

How to remove the 'module support bracket' on the Small Signal Panel (SSP):
1. Remove the two fixation screws [E].
2. Pull the snap-hooks [F] to the outside direction, and remove the bracket. The left snap-hook is somewhat difficult to release (with some effort it is possible to release it, by manipulating the hook with a finger underneath the MCS-module at the left hand side).

LSP support bracket

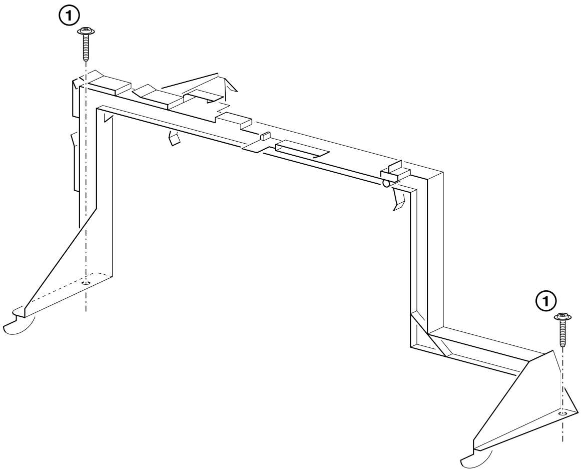

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Figure 4-6

How to remove the 'module support bracket' on the Large Signal Panel (LSP):
1. Remove the two fixation screws [1].
2. Remove the Top Supply panel (besides the LSP, see 'Service position 3' below).
3. Now remove the bracket.

4.2 Service Positions

This chassis has several predefined service positions:
1. For the component side of the main chassis panels (SSP, LSP and Top Supply).
2. For the copper side of the Multi Channel Sound (MCS) panel.
3. For the copper side of the Top Supply panel (TSP).
4. For the copper side of both the LSP and TSP.

All service positions are explained in more detail below.

4.2.1 Service Position 1

Overiew 1

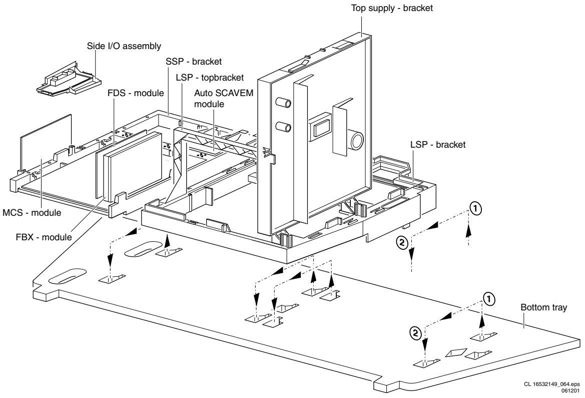

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Figure 4-7

1. Pull the complete SSP- and LSP assembly about eight cm backwards
   Caution: be very careful not to damage the CRT panel with the DAF-module!.
   The brackets are not fixed together, but can be repositioned backwards, as if they were one bracket.
2. Hook the brackets in the first row of the fixation-holes in the bottom plate (in other words: re-position the fixation from [1] to [2]).
3. Now all important service test points are accessible at the topside of the SSP.

4.2.2 Service position 2

Overiew 2

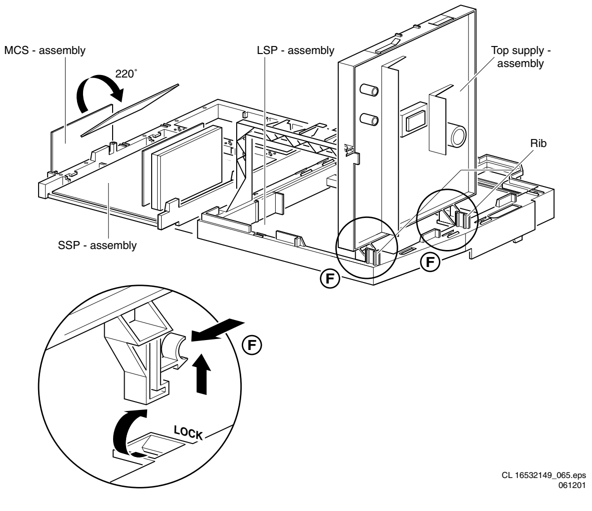

Figure 4-8

In its normal position, the MCS module can be serviced from the copper side (left hand side).
In order to gain access to the other side of the board (reflow-side), do the following:

1. First, release the snap construction at the bottom side of the MCS module. To do this, release the hook with e.g. a screwdriver (approach it from the rear).
2. After release, rotate the board about 220 degrees clockwise (hinge at connectors). The board can lean on the SSP top bracket.
3. All reflow components and test points on this side, are accessible now.

4.2.3 Service Position 3

Overiew 3

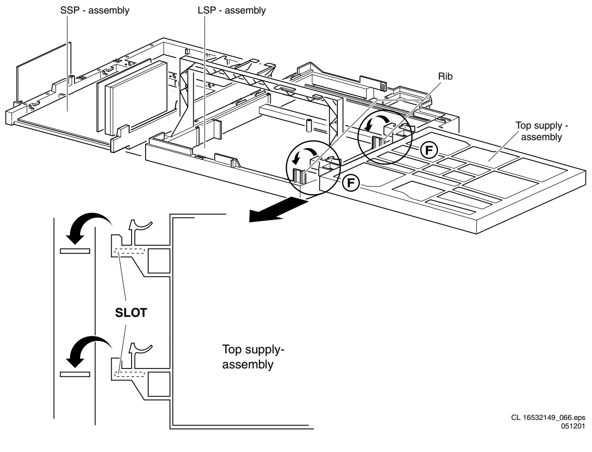

Figure 4-9

In order to gain easy access to the copper side of the Top Supply (TSP) assembly, do the following:

1. Pull the two release hooks (F) of the TSP-bracket backwards (see figure of ‘Service position 2’).
2. After you hear a release click, you can lift the bracket.
3. Now, rotate the assembly 90 degrees clockwise (from vertical to horizontal position).
   Caution: before doing this, release the wire cables from their clamps and, if necessary, disconnect the wire cable 0390 coming from the rotation-coil.
4. Place the two support-posts [F] of the assembly over the two ribs that are available on the right side of the LSP bracket.
5. The copper side of the TSP, with its service test points is available now.

4.2.4 Service position 4

Overiew 4

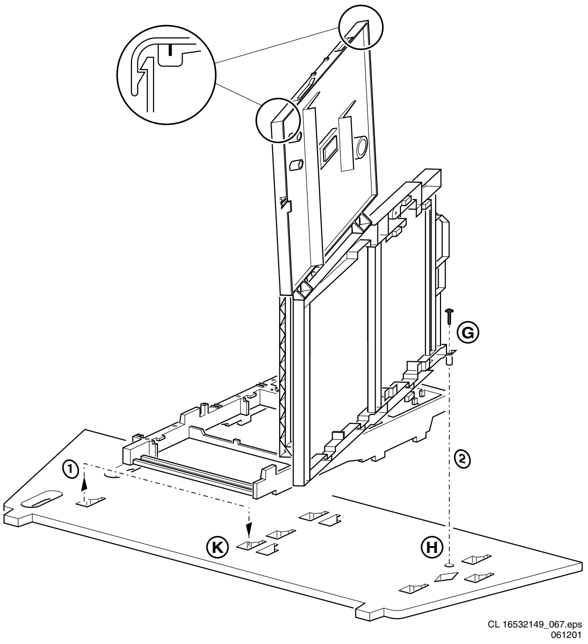

Figure 4-10

In order to gain easy access to the component sides of the LSP and Top Supply assembly, do the following:

1. First, reinforce the above-described ‘TSP fixation’ with a screw (the rear support-post contains a hole for this).
2. Now move as well the SSP- as the LSP bracket about 25 cm to the right.
3. Rotate the complete LSP/TSP assembly 90 degrees anti-clockwise, such that snap hook [G] is placed into hole [H]. If necessary, reinforce this construction with a screw.
4. Now you can measure all the service test points of the LSP on the right hand side, and of the TSP at the left hand side.
5. For measurement safety, shift the left front hook of the SSP bracket in the right SSP hole of the bottom plate (see [K] of service position 1).

4.2.5 FDS-module

One side is easy accessible whit the module on its place. One way to measure the other side (= FBX side) is to remove the FBX and overrule the protections (see 'Repair Tips' in chapter 5).

4.2.6 Feature Box (FBX)

First, remove the shielding of the FBX. Now, the test points on the 'LOT side' are easy accessible.
To get access to the test points on the 'FDS side', you have to remove the FDS module and bypass the RGB-path (see also the 'Repair Tips' in chapter 5).

4.2.7 Auto-SCAVEM

This panel is placed in front of the SSP. Because most of its components are placed on the bottom side, you must lift the panel from its bracket before you can measure it. Therefore release the two fixation clamps (one at the 'SSP side' and one at the 'LSP side'), and lift the panel.

4.3 Board Removal

Sometimes, it can be necessary to swap a complete Printed Wiring Board (PWB). How that can be done is explained below.

4.3.1 Small Signal Panel (SSP)

1. Remove the ‘module support bracket’ (see paragraph 4.1.6).
2. Release the three fixation clamps on the right hand side of the bracket.
3. Press the board upwards at the same side.
4. Remove the board from the bracket.

4.3.2 Top Supply Panel (TSP)

1. Remove the fixation screws (one at the top, one on the right side, and two on the left side).
2. Release the two top-corner snap constructions (see circle in figure ‘Position 4’), by forcing them outwards.
3. The panel hinges at the bottom of the bracket. Remove the bracket, by forcing the two sides of the bracket somewhat outwards.

4.3.3 Large Signal Panel (LSP)

1. Remove the Top Supply module (see paragraph above)
2. Remove the ‘module support bracket’ (see paragraph 4.1.6).
3. Remove the fixation screw in the middle of the Large Signal board.
4. Release the fixation clamps on the right, rear, and front side of the bracket (the board hinges at the left side).
5. Remove the board from the bracket.

4.3.4 Top Control Assy/Panel

Control assy

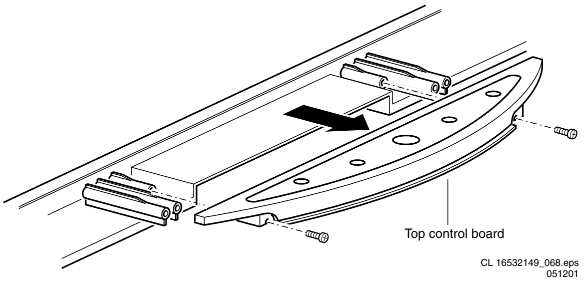

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Figure 4-11

1. Release both fixation screws about 5 full turns.
2. Pull the complete assy back- and upwards (it hinges in the cabinet front).
3. Flip the assy, and you can access the board by releasing (carefully) the four fixation clamps.

4.3.5 Side-I/O Assy/Panel

Side I/O

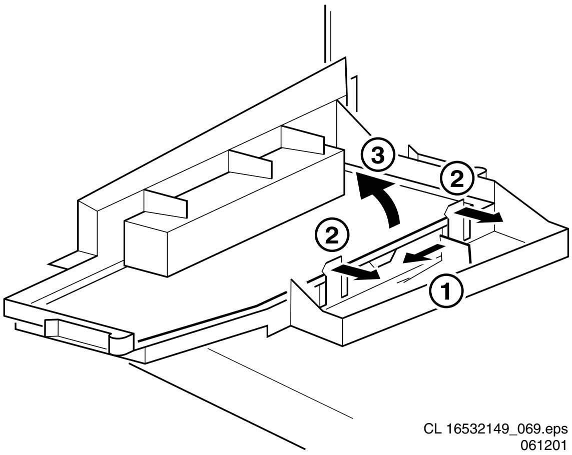

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Figure 4-12

1. Release the snap-hook [1] with your finger.
2. At the same time, pull the assy backwards [2].
3. Release the two fixation clamps on the right side of the bracket (the board hinges at the left side).
4. Remove the board from the bracket.

4.3.6 Mains Switch Assy/Panel

Mains Switch

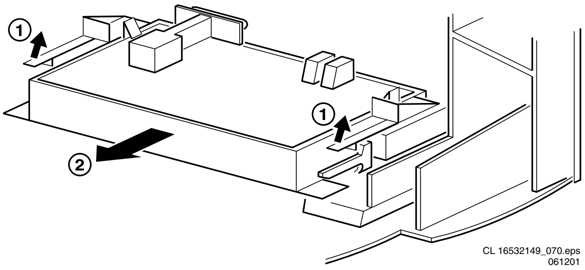

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Figure 4-13

1. Release the two fixation clamps (rather difficult to reach), by pushing them upwards [1]. At the same time, pull the complete assy backwards [2]
   Note: be aware that the degaussing coil can hamper this.
2. Release the two fixation clamps on the two sides of the bracket (the board hinges at the connector side).
3. Remove the board from the bracket.
4. When the light guide (sitting in the cabinet, in front of the LEDs) is defective, you can replace it by pushing it forwards at the left side (seen from the rear). It hinges at the right side.

4.3.7 Wireless Active Surround Box

Exploded view

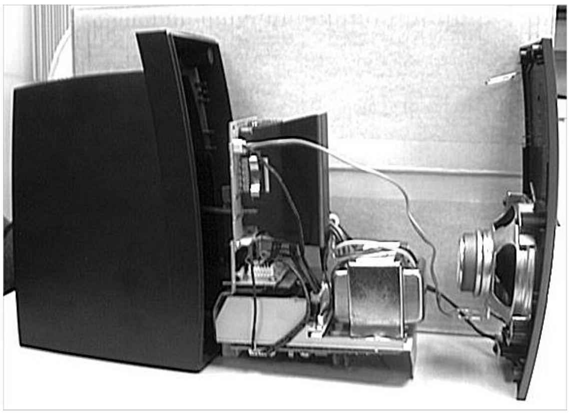

Figure 4-14

The box consists of four panels (W1 to W4), which are part of one family/combi-board. They are fixed together with wire cables (sometimes without connectors).

1. Remove the four screws which hold the front cover.
2. If necessary, unplug the loudspeaker and the LED panel (W4).
3. Remove the two screws which hold the clickfit connector for the passive loudspeaker.
4. Remove the six screws that hold the metal frame (which hold all PWBs and transformer).
5. See photo above for the exploded view.

PWB location

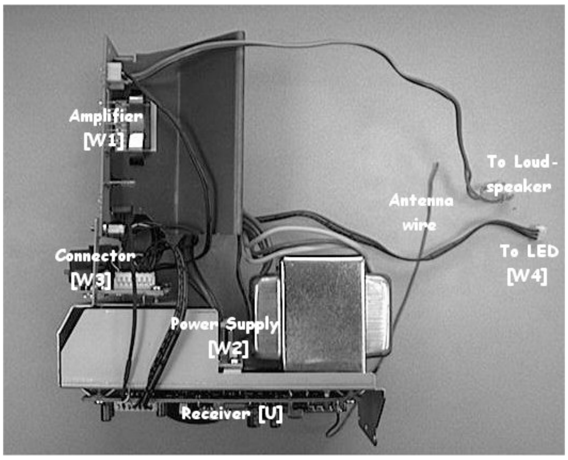

Figure 4-15

Each panel is now easily accessible to measure. If necessary, remove the panel from the metal frame by removing the belonging screws. See photo above for the panel positions. See further chapter 8.7 of the Training Manual MG3.1E.

To reassemble the box, do all processes in reverse order.
Be sure that, before the front cover is mounted:

- The (blue) antenna wire is mounted correctly in its guiding brackets.
- The 'foam dust cover' is replaced on the channel selector switch (on the bottom PWB).
- All wires/cables are returned in their original positions.

4.4 Set Reassembly

To reassemble the whole set, do all processes in reverse order.

Be sure that, before the rear cover is mounted:

- The mains cord is mounted correctly in its guiding brackets.
- All wires/cables are returned in their original positions.

5. Service Modes, Error Codes and Fault Finding

Index of this chapter:

1. Test Points
2. Service Modes
3. Problems and Solving Tips (related to TV-settings).
4. ComPair
5. Error Codes
6. Protections
7. Repair/Service Tips

5.1 Test Points

5.1.1 General Test Conditions

Perform the measurements under the following conditions:
- Service Default Mode.
- Video: Colour bar signal.
- Audio: 3 kHz left, 1 kHz right.

5.1.2 Waveform Test Points

The chassis is equipped with test points, which are, in most cases, printed on the circuit board assemblies (if not, please check chapter 6 ‘test point overview’). They refer to the functional blocks. The test points have names starting with I for IF, S for sound etc. The numbering is done in a logical sequence for diagnostics.

Note: Not all test points are measured, but they can serve as identification names in Service communication (e.g. ComPair fault find trees, SearchMan files).
In the following cases, there will be no waveform:
- When already a V_{DC} voltage is displayed in the diagrams, or when the waveform does not have an added value.
- External AV-inputs are not measured, as the waveform is equal to the source (dependent of load resistor matching).

5.1.3 DC-voltage Test Points

From practically all semiconductor pins, the DC-voltages are measured. These values are displayed in the circuit diagrams. If a DC-value is displayed between brackets then this value is measured in STANDBY-mode.

5.2 Service Modes

Service Default Mode (SDM) and Service Alignment Mode (SAM) offer several features for the service technician, while the Customer Service Mode (CSM) is used for communication between a Philips Customer Care Centre (P3C) and a customer.

There is also the option of using ComPair, a hardware interface between a computer (see requirements below) and the TV chassis. It offers the ability of structured troubleshooting, test pattern generation, error code reading, software version readout, and software upgrading.
Requirements: a Pentium processor, Windows 95/98, and a CD-ROM drive (see also paragraph 5.4).

5.2.1 Service Default Mode (SDM)

Purpose
- To create a pre-defined setting to get the same measurement results as given in this manual.
- To override SW protections (only when SDM is entered via the 'service pins' on SSP connector 0356).

Specifications
- Tuning frequency: 475.25 MHz for PAL/SECAM.
- Colour system: SECAM L for France or PAL B/G for the rest of Europe.
- All picture settings at 50 % (brightness, colour, contrast).
- All sound settings at 50 % (except volume: at 25 %).
- All service-unfriendly modes (if present) are disabled, like:
  - (sleep) timer,
  - child/parental lock,
  - blue mute,
  - auto switch-off (when no 'IDENT' video signal was received for 10 minutes),
  - skip/blank of non-favourite pre-sets,
  - smart modes,
  - auto store of personal presets,
  - auto user menu time-out.

How to Enter SDM
Use one of the following methods:
- Use the standard RC-transmitter and key in the code **0 6 2 5 9 6**, directly followed by the ‘MENU’ button.
  Note: It is possible that, together with the SDM, the main menu will appear. To switch it off, push the ‘MENU’ button again).
- Short pins 2 and 3 on connector 0356 of the SSP (see Fig. 'SSP Component Side' in chapter 8) while the set is in the normal operation mode.
  Caution: Entering SDM by this method will override all the processor-controlled protections. When doing this, the service-technician must know exactly what he is doing, as it could lead to damaging the set.
- Use the ‘DEFAULT’ button on the Dealer Service Tool (RC7150).
- Use the DST-emulation feature of ComPair.

SDM Menu

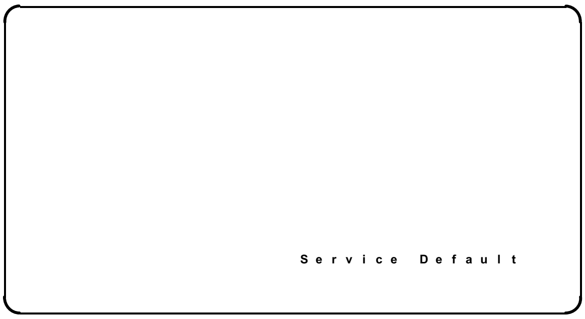

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Figure 5-1

After entering SDM, a blank screen is visible, with 'Service Default' in the lower right part for recognition.

How to Navigate
To toggle to the SAM mode, use a standard customer RC-transmitter and key in the code **0 6 2 5 9 6**, directly followed by the ‘OSD (i+)’ key.

How to Exit
Switch the set to STANDBY by pressing the Standby button(⏻) on the remote control transmitter. If you switch the set 'off' via the mains switch, the set will return in SDM when Mains power is re-applied.

5.2.2 Service Alignment Mode (SAM)

Purpose

- To perform (software) alignments.
- To change option settings.
- To easily identify the used software version.
- To view operational hours.
- To display (or clear) the error code buffer.

Specifications

- Software version.
- Operational hours counter.
- Options setting.
- Error buffer reading and erasing.
- Software alignments.

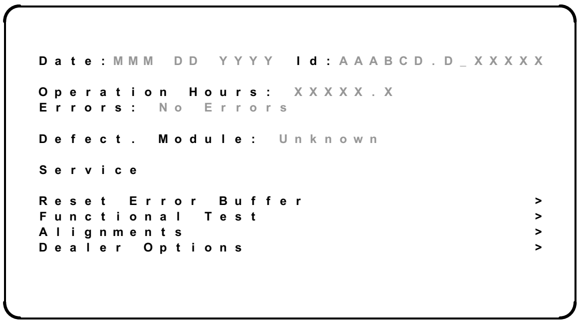
How to Enter

Use one of the following methods:

- Use the standard RC-transmitter and key in the code **0 6 2 5 9 6** directly followed by the 'OSD (i+)' button.
- Short pins 1 and 2 of connector 0356 on the SSP.
- Use the 'ALIGN' button on the Dealer Service Tool (RC7150), enter password **3 1 4 0** and press 'OK'.
- Use the DST-emulation feature of ComPair.

The following screen is visible:

SAM Menu



```
Date:MMM DD YYYY Id:AAABCD.D_XXXXX

Operation Hours: XXXXX.X
Errors: No Errors

Defect. Module: Unknown

Service

Reset Error Buffer                  >
Functional Test                     >
Alignments                          >
Dealer Options                      >
```

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140501

Figure 5-2

- **Date.** Displays the software date.
- **ID.** Displays the main software version of the ROM (example: MG32E11. 0_01234 = AAABCD.D_XXXXX).
  - A = the chassis name (MG32).
  - B = the region: E = Europe, A = Asia Pacific, U = NAFTA, L = LATAM.
  - C = the language cluster number.
  - D = the main software version number.
  - X = latest 5 digits of 12nc code software.
  - For the latest software versions, see the 'Product Survey - Colour Television' publication, which is issued 4 times per year.
- **Operation Hours.** Displays the accumulated total of operation hours.
- **Errors** (followed by maximal 10 errors). The most recent error is displayed at the upper left (for an error explanation see paragraph 5.5).
- **Defect. Module.** Here, the module that generates the error is displayed. If there are multiple errors in the buffer that have not all been generated by a single module there is probably another defect. It will then display the message 'Unknown' here.
- **Reset Error Buffer.** When you press the 'OK' button, the error buffer is reset.
- **Functional Test.** All devices are tested via the 'OK' button. Eventual errors are displayed in the error buffer. The error buffer is not erased, the content returns when this test is terminated.
- **Alignments.** This will activate the 'Alignments' sub-menu.
- **Dealer Options.** Extra features for the dealers.

Note: When an NVM was corrupted (or replaced) in the MG3.1E chassis, the microprocessor replaced the content with default data (to assure that the set can operate). However, all presets and alignment values are gone now, and option numbers are also not correct. So, this was a very drastic way. In the MG3.2E chassis, the procedure is implemented in another way:

- The moment the processor recognises a corrupted NVM, an extra line will be added to the SAM menu: '**Initialise NVM**'.
- Now, you can do two things (dependent of the service instructions at that moment):
  - Save the content of the NVM via ComPair for development analysis, **before** initialising. This will give the Philips Service department an extra possibility for diagnosis (e.g. when Development asks for this).
  - Initialise the NVM (same as in the past, however now it happens conscious).

How to Navigate

- In SAM, you can select the menu items with the 'CURSOR UP/DOWN' key on the RC-transmitter. The selected item will be highlighted. When not all menu items fit on the screen, move the 'CURSOR UP/DOWN' key to display the next/previous menu items.
- With the 'CURSOR LEFT/RIGHT' keys, it is possible to:
  - (De)activate the selected menu item.
  - Change the value of the selected menu item.
  - Activate the selected submenu.
- When you press the 'MENU' key in a submenu, you will return to the previous menu.

How to Exit

Use one of the following methods:

- Press the 'MENU' button on the RC-transmitter.
- Switch the set to 'STANDBY' (⏻) via the RC-transmitter.
- Switch the set 'off' and 'on' with the mains switch.
- Press the 'EXIT' button on the DST.

5.2.3 Customer Service Mode (CSM)

Purpose

When a customer is having problems with his TV-set, he can call his dealer. The service technician can than ask the customer to activate the CSM, in order to identify the status of the set. Now, the service technician can judge the severness of the complaint. In many cases, he can advise the customer how to solve the problem, or he can decide if it is necessary to visit the customer.
The CSM is a read only mode, therefore modifications in this mode are not possible.

How to Enter CSM

Use one of the following methods:

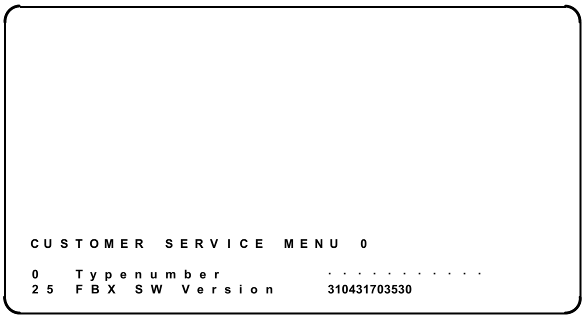
- Press the 'MUTE' button on the RC-transmitter simultaneously with the 'MENU' button on the TV (top control) for, at least, 4 seconds (be sure to point the RC-transmitter directly to the IR-receiver of the set, otherwise you will activate the 'Dealer Demo Mode').
- Key in the code **1 2 3 6 5 4** via the standard RC transmitter.

Notes

- Activation of the CSM is only possible if there is no (user) menu on the screen!
- If you do not point the RC-transmitter correctly to the RC-receiver in the set, and you push the 'MENU' button for more than 6 s, the TV starts in 'demo' mode. To leave this mode, push 'MENU' again for more than 6 s.

After activation of the Customer Service Menu, the following screen (Customer Service Menu 0) will appear:

CSM Menu 0



```
CUSTOMER SERVICE MENU 0

0   Typenumber          ...........
25  FBX SW Version      310431703530
```

CL16532149_072.eps
061201

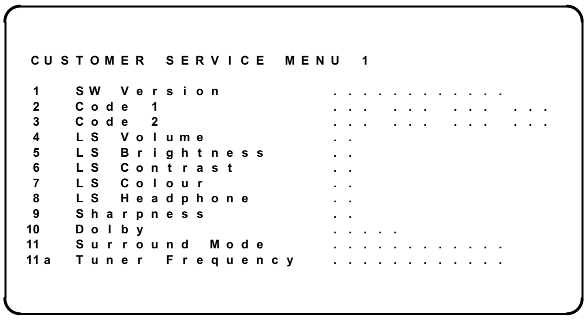
Figure 5-3

- **Type number.** This information (e.g. 32PW9767/12) is very helpful for a helpdesk or repair shop, as reference for further diagnosis. In this way, it is not necessary for the customer to look at the rear of his TV-set.
- **FBX SW Version.** The 12nc-code of the build-in Feature Box software version. For the latest software versions, see the ‘Product Survey - Colour Television’ publication, which is issued four times per year.

By means of the ‘CURSOR-DOWN’ knob on the RC-transmitter the Customer Service Menu 1 will appear.
By means of the ‘CURSOR-UP’ knob on the RC-transmitter the Customer Service Menu 0 will appear again.

Customer Service Menu 1 represents following information:

CSM Menu 1



```
CUSTOMER SERVICE MENU 1

1    SW Version          ............
2    Code 1              ... ... ... ...
3    Code 2              ... ... ... ...
4    LS Volume           ..
5    LS Brightness       ..
6    LS Contrast         ..
7    LS Colour           ..
8    LS Headphone        ..
9    Sharpness           ..
10   Dolby               .....
11   Surround Mode       ............
11a  Tuner Frequency     ............
```

CL16532044_034.eps
140501

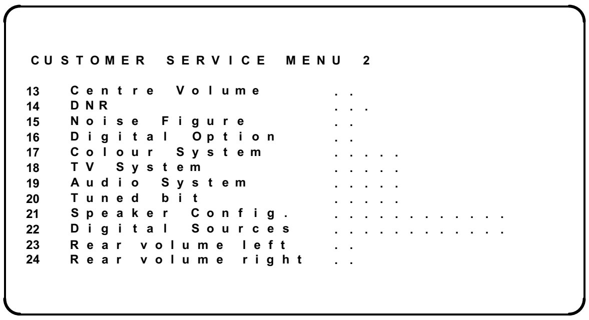
Figure 5-4 CL

- **Software version.** The build in software version (e.g. MG32E11.0_XXXXX). You will find details of the software versions in the chapter 'Software Survey' of the 'Product Survey - Colour Television' publication. This publication is issued four times a year.
- **Code 1.** Gives the last five errors of the error buffer. As soon as the built-in diagnose software has detected an error the buffer is adapted (see paragraph 5.5.3 for a description).
- **Code 2.** Gives the first five errors of the error buffer. As soon as the built-in diagnose software has detected an error the buffer is adapted. The last occurred error is displayed on the leftmost position of code 2. Each error code is displayed as a 3 digit number. When less than 10 errors occur, the rest of the line(s) is (are) empty. In case of no errors, the text 'No Errors' is displayed (see paragraph 5.5.3 for a description).
- **LS Volume.** Gives the Last Status of the volume as set by the customer for this selected transmitter. The value can vary from 0 (volume is minimum) to 36 (volume is maximum). Volume values can be changed via the volume key on the RC-transmitter.
- **LS Brightness.** Gives the Last Status of the brightness as set by the customer for this selected transmitter. The value can vary from 0 (brightness is minimum) to 63 (brightness is maximum). Brightness values can be changed via the 'CURSOR LEFT' and 'CURSOR RIGHT' keys on the RC-transmitter after pressing the 'MENU' button and selecting 'PICTURE' and 'BRIGHTNESS'.
- **LS Contrast.** Gives the Last Status of the contrast as set by the customer. The value can vary from 0 (contrast is minimum) to 63 (contrast is maximum). Contrast values can be changed via 'CURSOR LEFT' and 'CURSOR RIGHT' keys on the RC-transmitter after pressing the 'MENU' button and selecting 'PICTURE' and 'CONTRAST'.
- **LS Colour.** Gives the Last Status of the colour saturation, as set by the customer. The value can vary from 0 (colour is minimum) to 63 (colour is maximum). Colour values can be changed via 'CURSOR LEFT' and 'CURSOR RIGHT' keys on the RC-transmitter after pressing the 'MENU' button and selecting 'PICTURE' and 'COLOUR'.
- **LS Headphone.** Gives the Last Status of the headphone volume, as set by the customer. The value can vary from 0 (volume is minimum) to 24 (volume is maximum). Headphone volume values can be changed via the 'CURSOR LEFT' and 'CURSOR RIGHT' keys on the RC-transmitter after pressing the 'MENU' button and selecting 'SOUND' and 'HEADPHONE'.
- **Sharpness.** Gives the sharpness value. The value can vary from 0 (sharpness is minimum) to 7 (sharpness is maximum). In case of bad antenna signals, a too high value of the sharpness can result in a noisy picture. Sharpness values can be changed via the 'CURSOR LEFT' and 'CURSOR RIGHT' keys on the RC-transmitter after pressing the 'MENU' button and selecting 'PICTURE' and 'SHARPNESS'.
- **Dolby.** Indicates whether the received transmitter transmits Dolby sound (present) or not (not present). Attention: The presence of Dolby can only be tested by the software on the Dolby Signalling bit. If a Dolby transmission is therefore received without a Dolby Signalling bit, then this indicator will show 'not present' even though such a Dolby transmission is received.
- **Surround Mode.** Indicates the by the customer selected surround mode (or automatically chosen mode). In case the set is a Non-Dolby set, there will be displayed '0'. If it is a Dolby-set then is displayed: 'Stereo', 3D Surround', 'Dolby Pro Logic', 'Dolby 3 Stereo', or 'Hall'. These settings can be influenced by toggling the surround mode button on remote control (white button). It can also have been selected automatically by signalling bits (internal software
- **Tuner Frequency.** Indicates the frequency the selected transmitter is tuned to. The tuner frequency can be changed via the 'CURSOR LEFT' and 'CURSOR RIGHT' keys for fine tune or by entering directly with the digit keys 0 to 9 on the RC-transmitter after opening the installation menu and selecting ‘MANUAL INSTALLATION’. Pressing 'TIMER' and 'ENLARGE' at the same time can open the installation menu.

By means of the 'CURSOR-DOWN' knob on the RC-transmitter the Customer Service Menu 2 will appear. By means of the 'CURSOR-UP' knob on the RC-transmitter the Customer Service Menu 1 will appear again.

Customer Service Menu 2 represents following information:

CSM Menu 2



```
CUSTOMER SERVICE MENU 2

13   Centre Volume         . .
14   DNR                   . . .
15   Noise Figure          . .
16   Digital Option        . .
17   Colour System         . . . . .
18   TV System             . . . . .
19   Audio System          . . . . .
20   Tuned bit             . . . . .
21   Speaker Config.       . . . . . . . . . . . .
22   Digital Sources       . . . . . . . . . . . .
23   Rear volume left      . .
24   Rear volume right     . .
```

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061201

Figure 5-5

- **Centre Volume.** Gives the volume value of the centre loudspeaker. This value can vary from 0 (minimum volume) to 63 (maximum volume). Centre volume can be changed via the 'CURSOR LEFT' and 'CURSOR RIGHT' keys on the RC-transmitter after pressing the 'MENU' button and selecting 'SOUND', 'DOLBY PRO LOGIC' and selecting 'CENTRE VOLUME'. This feature is only available when surround mode is in 'DOLBY PRO LOGIC', 'DOLBY 3 STEREO', or '3D SURROUND'.
- **DNR.** Gives the setting of the Dynamic Noise Reduction for the selected transmitter. The DNR can be changed via the 'DNR' button on the remote control handset. The following selections are possible:
  - 'OFF - MIN - MED - MAX' or,
  - 'OFF - AUTOMATIC' (for sets with 'Automatic Noise Reduction').
- **Noise Figure.** Gives the noise ratio for the selected transmitter. This value can vary from 0 (good signal) to 127 (average signal) and to 255 (bad signal).
- **Digital Option.** Gives the selected digital mode. Change via the 'CURSOR LEFT' and 'CURSOR RIGHT' keys on the RC-transmitter, after pressing the 'MENU' button and selecting 'PICTURE', 'DIGITAL OPTIONS'. Options are:
  - 100 HZ DIG. SCAN.
  - PIXEL PLUS.
  - DOUBLE LINES.
- **Colour System.** Gives information about the colour system of the selected transmitter.
  - Black and white: No colour carrier received
  - PAL: PAL signal received
  - SECAM: SECAM signal received
  - NTSC: NTSC signal received
- **TV System.** Gives information about the video system of the selected transmitter.
  - BG: BG signal received
  - DK: DK signal received
  - I: PAL I signal received
  - L: SECAM L signals received
  - M38.9: NTSC M signal received with video carrier on 38.9 MHz
  - MN: NTSC M signal received
- **Audio System.** Gives information about the audio system of the selected transmitter.
  - Sound Muted: No sound
  - Dolby Pro Logic: Dolby Pro Logic sound received
  - Mono: Mono sound received
  - Stereo: Stereo sound received
  - Dual I: Language I received
  - Dual II: Language II received
  - Digital Mono: Digital mono sound is received
  - Digital Stereo: Digital stereo sound is received
  - Digital Dual I: Digital language I is received
  - Digital Dual II: Digital language II is received
- **Tuned bit.** Gives information about the tuning method of the stored pre-set. If a channel is found via 'automatic installation', you will see the value 'On'. When you change this (automatically found) frequency via 'fine tune' adjustment (installation menu - manual installation), the displayed value will change to 'Off'. Therefore, when you see the value 'Off' in this line, it is an indication that the received channel is a non-standard signal (e.g. of a VCR).
- **Speaker config.** Gives the speaker configuration settings. In case the set is a non-Dolby set, it displays '0'. If it is a Dolby-set, it displays: 'FULL INTERNAL', 'L/R EXTERNAL', 'SURROUND EXTERNAL' or 'FULL EXTERNAL'. Change the speaker configuration (for a Dolby-set), via the 'CURSOR LEFT' and 'CURSOR RIGHT' keys on the RC-handset after opening the 'INSTALLATION' menu and selecting 'SETUP'. Open the 'INSTALLATION' menu by pressing the 'TIMER' and 'ENLARGE' buttons at the same time.
- **Digital Sources.** Gives the configuration setting for the digital source. If one of these is selected, the starting point is a top quality signal on that input and a number of settings are therefore changed automatically. Change the digital source via the 'CURSOR LEFT' and 'CURSOR RIGHT' keys on the RC-transmitter after opening the installation menu and selecting 'SETUP'. Pressing 'TIMER' and 'ENLARGE' at the same time can open the installation menu. It displays:
  - NONE
  - EXT1, 2, 3, or 4
  - EXT1 + DIG. AUDIO
  - EXT1, 2, 3, or 4 + DIG. STB (Digital Set Top Box)
  - FRONT
- **Rear volume Left.** Only valid when Dolby Digital option is 'on'. This gives the volume value of the left surround sound loudspeaker. This value can vary from 0 (minimum volume) to 63 (maximum volume). Rear volume left can be changed via the ‘cursor left’ and ‘cursor right’ keys on the remote control handset after pressing the ‘menu’ button and selecting ‘sound’, ‘Surround settings’ and selecting ‘Rear volume left’.
- **Rear Volume Right.** Only valid when the Dolby Digital option is 'on'. This gives the volume value of the right surround sound loudspeaker. This value can vary from 0 (minimum volume) to 63 (maximum volume). Rear volume right can be changed via the ‘cursor left’ and ‘cursor right’ keys on the remote control handset after pressing the menu button and selecting ‘sound’, ‘Surround settings’ and selecting ‘Rear volume right’.

How to Exit CSM

Use one of the following methods:

- After you press a key on the RC-transmitter (with exception of the 'CHANNEL' and 'VOLUME' keys).
- After you switch the TV-set 'off' with the mains switch.

5.3 Problems and Solving Tips (Related to TV-settings)

Note: Below described problems are all related to the TV settings. The procedures to change the parameter (or status) of the different settings are described.

5.3.1 Picture Problems

Worse Picture Quality in Case of Digital Sources (e.g. DVD)

1. Check line ‘Digital sources’. This will give the indication ‘Front’, ‘Ext1’, ‘Ext1 + Dig. Audio’, ‘Ext2’, ‘Ext3’, ‘Ext4’ or ‘None’.

2. Check if the digital source is really connected to the indicated external input. If not, change the input to the correct one.

Snowy/Noisy Picture

Check line 'Noise Figure'. In case the value is 127 or higher and also high on other programs, check the aerial cable/aerial system.

Picture too Dark

1. Press 'Smart Picture' button on the Remote Control handset. In case picture improves, raise the brightness value or raise the contrast value. The new value(s) are automatically stored for all TV channels.
2. After switching on the Customer Service Mode, the picture is OK. Raise the brightness and/or the contrast value. The new value(s) are automatically stored for all TV channels.
3. Check lines 'Brightness' and 'Contrast'. The brightness and/or the contrast value is low (<15). Raise the brightness and/or contrast value.

Picture too Bright

1. Press 'Smart Picture' button on the Remote Control handset. In case picture improves, reduce the brightness value or reduce the contrast value. The new value(s) are automatically stored for all TV channels.
2. After switching on the Customer Service Mode, the picture is OK. Reduce the brightness value or reduce the contrast value. The new value(s) are automatically stored for all TV channels.
3. Check lines 'Brightness' and 'Contrast'. The brightness and/or the contrast value is high (>70). Reduce the brightness value or raise the contrast value.

Fading Picture

Digital scan effect. Check line 'DNR'. The status of 'DNR' is a value between 0 and 100. This value has not really a practical explanation. In case you have a fading picture, you could influence the 'DNR'-level by navigating route: ‘Menu’ - ‘Picture’ - ‘DNR’. There are four different levels selectable.

White Line around Picture Elements and Text

1. Press 'Smart Picture' button on the Remote Control handset. In case picture improves, reduce the sharpness value. The new value(s) are automatically stored for all TV channels.
2. After switching on the Customer Service Mode, the picture is OK. Reduce the sharpness value. The new value(s) are automatically stored for all TV channels.
3. Check line 'Sharpness'. Reduce the sharpness value. The new value(s) are automatically stored for all TV channels

No Picture

Check line ‘Tuned bit’. In case the value is ‘on’, install the required program again. Open the installation menu by pressing ‘Timer’ and ‘Enlarge’ at the same time, and perform manual installation.

Blue Picture and/or Unstable Picture

No proper signal is received. Check line 'Noise Figure'. If value is higher then 127, suspect the signal. Check your cable- or aerial signal.

Black and White Picture.

Check line 'Colour'. In case the value is low (<30), raise the value of colour. The new value(s) are automatically stored for all TV channels.

No Colours/ Colours not Correct / Unstable Picture / Colour Lines around Picture Elements.

Check lines 'TV System'. Check if system is OK.
BG stand for PAL B/G, L/La for SECAM L, I for PAL I or L', D/K or SECAM D/K. They correspond with the System selections made in the 'install' menu, respectively West Europe, France, UK, and East Europe. In case system is wrong, correct this via manual installation.

Menu Text not Sharp Enough.

1. Press 'Smart Picture' button on the Remote Control handset. In case picture improves, reduce the contrast value. The new value(s) are automatically stored for all TV channels.
2. After switching on the Customer Service Mode, the picture is OK. Reduce the contrast value. The new value(s) are automatically stored for all TV channels.
3. Check line 'Contrast'. If the value is high (>75), reduce it.

5.3.2 Sound Problems

No Sound from Left and Right Speaker.

1. Press 'Smart Sound' button on the Remote Control handset. In case sound improves, raise the volume value. The new value(s) are automatically stored for all TV channels.
2. After switching on the Customer Service Mode, the volume is OK. Raise the volume value. The new value(s) are automatically stored for all TV channels.
3. Check line 'Volume'. The value is low, so raise it. The new value(s) are automatically stored for all TV channels.

Sound too Loud for Left and Right Speaker.

1. Press 'Smart Sound' button on the Remote Control handset. In case sound improves, reduce the volume value. The new value(s) are automatically stored for all TV channels.
2. After switching on the Customer Service Mode, the volume is OK. Reduce the volume value. The new value(s) are automatically stored for all TV channels.
3. Check line 'Volume'. The value is high, so reduce it. The new value(s) are automatically stored for all TV channels.

No Sound from Centre Speaker.

1. Check line ‘Centre Volume’. If the value is low, raise it.
2. In case of a Dolby set, check line ‘Surround mode’. The centre speaker is only active in the surround modes 3D Surround, ProLogic, Dolby 3 Stereo and DD.

Sound too Loud from Centre Speaker.

Check line ‘Centre Volume’. If the value is high, reduce it.

No Sound from Rear Speakers.

1. Check line ‘Surround mode’. In case this line is ‘Off’ or ‘Hall’, change the surround mode into 3D Surround, ProLogic, Dolby 3 Stereo and DD.
2. Check line ‘Rear volume’. If the value is low, raise it. The new value(s) are automatically stored for all TV channels.
3. Check lines ‘Rear volume left’ and ‘Rear volume right’. If the value is low, raise them. The new value(s) are automatically stored for all TV channels.
4. Check if the surround boxes receive sound, the green LED should be on.
5. Check if the correct RF-channel is chosen. Look at the bottom of the active box for the RF-channel of the surround speakers. Check the installed RF-channel in the installation menu. If this RF-channel is different, change it to the correct one.

5.4 ComPair

5.4.1 Introduction

ComPair (Computer Aided Repair) is a service tool for Philips Consumer Electronics products. ComPair is a further development on the European DST (service remote control), which allows faster and more accurate diagnostics. ComPair has three big advantages:

- ComPair helps you to quickly get an understanding on how to repair the chassis in a short time by guiding you systematically through the repair procedures.
- ComPair allows very detailed diagnostics (on I^{2}C level) and is therefore capable of accurately indicating problem areas. You do not have to know anything about I^{2}C commands yourself because ComPair takes care of this.
- ComPair speeds up the repair time since it can automatically communicate with the chassis (when the microprocessor is working) and all repair information is directly available. When ComPair is installed together with the SearchMan electronic manual of the defective chassis, schematics and PWBs are only a mouse click away.

5.4.2 Specifications

ComPair consists of a Windows based faultfinding program and an interface box between PC and the (defective) product. The ComPair interface box is connected to the PC via a serial or RS232 cable.
In this chassis, the ComPair interface box and the TV communicate via a bi-directional infrared link.

The ComPair faultfinding program is able to determine the problem of the defective television. ComPair can gather diagnostic information in two ways:

- **Automatic** (by communication with the Receiver box): ComPair can automatically read out the contents of the entire error buffer. Diagnosis is done on I^{2}C level. ComPair can access the I^{2}C bus of the Receiver box. ComPair can send and receive I^{2}C commands to the micro controller of the Receiver box. In this way, it is possible for ComPair to communicate (read and write) to devices on the I^{2}C busses of the Receiver box.
- **Manually** (by asking questions to you): Automatic diagnosis is only possible if the micro controller of the Receiver box is working correctly and only to a certain extend. When this is not the case, ComPair will guide you through the faultfinding tree by asking you questions (e.g. *Does the screen give a picture? Click on the correct answer: YES / NO*) and showing you examples (e.g. *Measure test-point I7 and click on the correct oscillogram you see on the oscilloscope*). You can answer by clicking on a link (e.g. text or a waveform picture) that will bring you to the next step in the faultfinding process.

By a combination of automatic diagnostics and an interactive question/answer procedure, ComPair will enable you to find most problems in a fast and effective way.

Beside fault finding, ComPair provides some additional features like:

- Up- or downloading of pre-sets.
- Managing of pre-set lists.
- Emulation of the (European) Dealer Service Tool (DST).
- If both ComPair and SearchMan (Electronic Service Manual) are installed, all the schematics and the PWBs of the set are available by clicking on the appropriate hyperlink. **Example:** *Measure the DC-voltage on capacitor C2568 (Schematic/Panel) at the SSP.*
  - Click on the 'Panel' hyperlink to automatically show the PWB with a highlighted capacitor C2568.
  - Click on the 'Schematic' hyperlink to automatically show the position of the highlighted capacitor.

Stepwise Start Up / Shut Down

Under normal circumstances, a fault in the power supply, or an error during start-up, will switch the television to protection mode. ComPair can take over the initialisation of the television. In this way it is possible to distinguish which part of the start-up routine (hence which circuitry) is causing the problem.

Stepwise start up explanation

This is realised via ComPair and is very helpful when a protection is activated (see also chapter 5.6).

Table 5-1

State	Mode description	Display LEDs	Enabled protections
0	- Low power standby - uP in Standby	Red 'on'	None
1	- High power standby - TV-set in standby	Red 0.5 Hz	None
2	- Supply 'on' - Protections 5V2, 8V6, and DC-PROT activated.	Orange/ Green0.25 Hz	67, 68, and 76
3	- Sound ICs initialised - Protections FBX- and TUNER activated.	Orange/ Green0.5 Hz	+ 77 and 80
4	- EHT startup - No black-current stabilisation - Protections VFB, HFB, LDP, and BC-PROT activated (blanked picture).	Orange/ Green2 Hz	+ 70, 71, 73, and 74
5	- TV operates - Unblanked picture.	Orange/ Green10 Hz	

Stepwise shut down explanation

In the stepwise shutdown mode, state 2 is skipped (it is not possible to de-initialise ICs).

Table 5-2

State	Mode description	Display LEDs(*)	Disabled protections
5	- TV operates - Unblanked picture.	Orange/ Green10 Hz	-
4	- EHT startup - No black-current stabilisation - All protections are enabled.	Orange/ Green2 Hz	-
3	- Sound ICs stay initialised - All protections are 'off'.	Orange/ Green0.5 Hz	74, 73, 71, and 70
1	- High power standby- TV-set in standby	Red 0.5 Hz	80, 77, 76, 68, and 67
0	- Low power standby- uP in Standby	Red 'on'	-

Note (*): When the set is in stepwise mode and, due to stepping-up, a protection is activated; the set will really go into protection (blinking red LED). The set will not leave the stepwise-mode however. By stepping up, the set can be activated again, until state X where the protection was activated. At state (X-1) diagnostic measurements can be performed.

5.4.3 How to Connect

1. First, install the ComPair Browser software on your PC (read the installation instructions carefully).
2. Connect the RS232 interface cable between a free serial (COM) port of your PC and the PC connector (marked with 'PC') of the ComPair interface.
3. Connect the Mains power adapter to the supply connector (marked with 'POWER 9V DC') on the ComPair interface.
4. Switch the ComPair interface 'off'.
5. Switch the Receiver box 'off' (remove the Mains power).

6. Point the ComPair interface to the ‘Service send-LED’ on the front of the set.
7. Plug the Mains power adapter in a Mains power outlet and switch on the interface. The green and red LEDs light up together. The red LED extinguishes after approximately 1 second, while the green LED remains lit.
8. Start the ComPair program and read the 'introduction' chapter.

Interface Connection

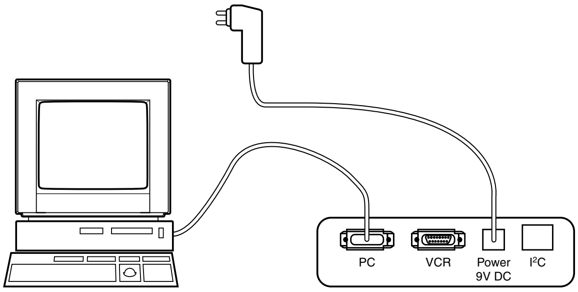

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Figure 5-6

Interface Arrangement

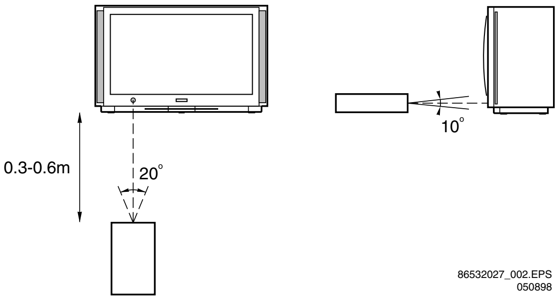

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Figure 5-7

5.4.4 How to Order

ComPair order codes:
- Starter kit ComPair, SearchMan software, and ComPair interface (excluding transformer): 4822 727 21629
- ComPair interface (excluding transformer): 4822 727 21631
- Starter kit ComPair software (registration version): 4822 727 21634
- Starter kit SearchMan software: 4822 727 21635
- ComPair CD (update): 4822 727 21637
- SearchMan CD (update): 4822 727 21638

5.5 Error Codes

The error code buffer contains all detected errors since the last time the buffer was erased. The buffer is written from left to right. When an error occurs that is not yet in the error code buffer, it is written at the left side and all other errors shift one position to the right.

5.5.1 How to Read the Error Buffer

It is possible to read out the error buffer in several ways:
- **On screen via the SAM.**
  In case picture is OK, the error buffer can be read easiest via the SAM. In the main menu of the SAM the last 10 different error codes occurred are displayed. The most recent detected error code is displayed on the left side.
  Examples:
  - **003 000 000 000 000**: error code 3 is the last and only detected error.
  - **002 003 000 000 000**: error code 3 was first detected and error code 2 is the last detected (newest) error.
- **On screen via the CSM.**
  Same explanation as above.
- **Via ComPair (or DST).**
  See ComPair/DST manual.

5.5.2 How to Clear the Error Buffer

Use one of the following methods:
- By activation of the 'RESET ERROR BUFFER' command in the SAM menu:
- When you transmit the commands 'DIAGNOSE' - '99' - 'OK' with ComPair (or with a DST). This works in all modes, except SAM.

Notes:
- When the error buffer is full (10 codes), no new error can be stored anymore. However, of every error raised is monitored how long it exists in the error buffer. When for any reason a false raised error exists in the buffer, it will be deleted after 50 hours. If this error still is actual after 50 hours, it will be raised again. In this way, it is safeguarded that history of error codes is stored.
- Sometimes it is an option to first write down the error buffer content, reset the buffer, and look again which error codes are generated by the set.
- If the content of the error buffer has not changed for 50 hours, it resets automatically.

5.5.3 Error Codes Overview

In case of non-intermittent faults, clear the error buffer before you begin the repair. These to ensure that old error codes are no longer present.

If possible, check the entire contents of the error buffer. In some situations, an error code is only the result of another error code and not the actual cause (e.g., a fault in the protection detection circuitry can also lead to a protection).

Table 5-3

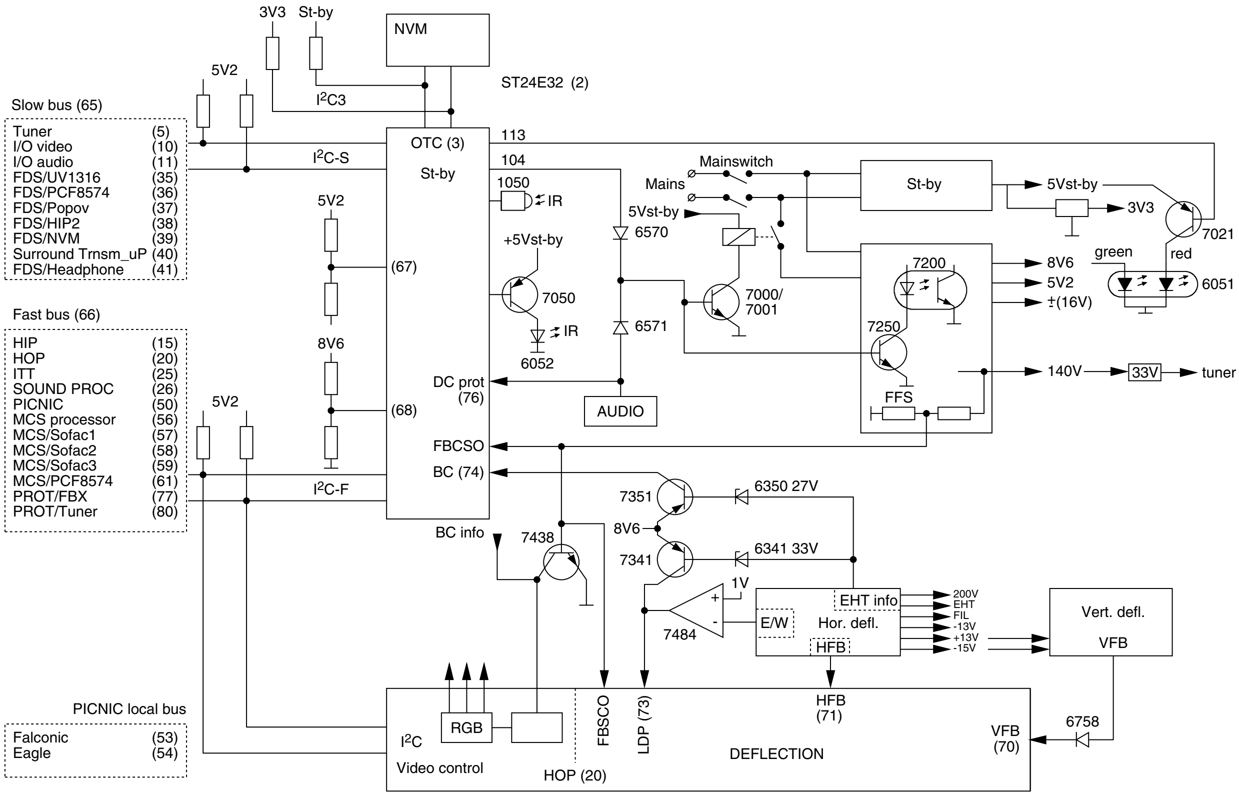
Error	Device	Description	Defective item	Diagram	Defective module indication
2	ST24E32 or M24C32	Non volatile memory	IC7008	K7	Control
3	SAA5801	OTC2.5 microprocessor/TXT	IC7003	K7	Control
5	UV1316	Tuner	U1102	K1	Tuner
10	TEA6415	I/O source select video	IC7208	K8	Source select
11	TEA6422	I/O source selct audio	IC7777	K8	Source select
15	TDA9320H	HIP I/O-video processing	IC7501	K1	Chroma IF I/O
20	TDA9330H	HOP video/deflection processor	IC7300	K6	Video Controller
21	TDA9178	LTP Peaking	IC7402	K6	Video Controller
25	MSP3410D	ITT sound processor	IC7751	K3	Audio module
26	SAA7712H	SEDSP Dolby processor	IC7770	K4	Audio module
35	UV1316	FDS Tuner	U1102	M1	Video Dual Screen Panel
36	PCF8574	FDS I/O Expander	IC7860	M2	Video Dual Screen Panel
37	SAB9079	FDS POPOV	IC7700	M4	Video Dual Screen Panel
38	TDA9320	FDS HIP2	IC7501	M1	Video Dual Screen Panel
39	M24C04	FDS NVM	IC7991	M1	Video Dual Screen Panel
40	83C751	Cordless Transmitter processor	IC7105	R	Surround Transmitter Panel
41	TDA7309	FDS Headphone	IC7620	M5	Video Dual Screen Panel
50	SAA4978H	FBX PICNIC	IC7611	L1	Feature Box
53	SAA4992	FBX FALCONIC	IC7626	L3	Feature Box
54	T8F24EF	FBX EAGLE	IC7724	L2	Feature Box
56	83C654	MCS processor	IC7803	N3	Digital Audio Module
57	TDA7438	MCS SOFAC L/R	IC7540	N8	Digital Audio Module
58	TDA7438	MCS SOFAC L/R	IC7600	N9	Digital Audio Module
59	TDA7438	MCS SOFAC L/R	IC7570	N10	Digital Audio Module
61	PCF8574	MCS I/O expander	IC7690	N16	Digital Audio Module
63	TDA8444	Auto Scavem DAC	IC7500	SC1	Auto Scavem
65	Slow I2C bus blocked		See fig 5.8	Slow I2C bus blocked	
66	Fast I2C bus blocked		See fig 5.8	Fast I2C bus blocked	
67	Supply 5V	5V2	See fig 5.8	+5V Supply	
68	Supply 8V	8V6	See fig 5.8	+8V Supply	
70	V fail protection	VFB	See fig 5.11	A3/A1/K6	Vertical Flyback
71	H fail protection	HFB	See fig 5.10	A1/K6	Horizontal Flyback
73	Line Deflection protection	LDP	See fig 5.8	A1/K6	Line Deflection
74	Beam Current Protection	BC-PROT	See fig 5.8	K6/K7	Beam Current
76	DC Sound protection	DC-PROT	See fig 5.8	A4	Sound Output
77	Feature box protection	FBX-PROT	See fig 5.8	L1	+3V (FBX) Supply
80	Tuner protection	Tuner-PROT	See fig 5.8	K1	+8V (Tuner) Supply

5.6 Protections

5.6.1 Introduction

This chassis has only one microprocessor (OTC), which remains active during Standby. This because the power of the microprocessor (and the attached memory chip set) is coming from the 3V3 supply, which is derived from the 5V Standby circuitry.
Therefore, in both 'Power on' as in 'Standby' mode, the microprocessor is connected to this power supply. The microprocessor controls the Standby line for switching 'on' and 'off' the main supply. In the Standby mode, or in the protection mode, the Standby line will open the contacts of relay 1002 via T7000, which results in switching 'off' the mains input to the main supply. In the mean time, via T7550, the LED-intensity of the opto-coupler will increase, which results in a quick shutdown of the power supply.
If a fault situation is detected, an error code is generated and, if necessary, the set is put in protection mode. This mode is indicated by blinking of the red front LED.

Protection Structure



3V3
St-by
NVM
5V2
ST24E32 (2)
I²C3
Slow bus (65)
Tuner (5)
I/O video (10)
I/O audio (11)
FDS/UV1316 (35)
FDS/PCF8574 (36)
FDS/Popov (37)
FDS/HIP2 (38)
FDS/NVM (39)
Surround Trnsm_uP (40)
FDS/Headphone (41)
I²C-S
OTC (3)
St-by
113
104
1050
IR
Mainswitch
Mains
5Vst-by
6570
St-by
5Vst-by
3V3
7021
+5Vst-by
7050
IR
6052
7000/
7001
7200
8V6
5V2
±(16V)
green
red
6051
7250
6571
Fast bus (66)
HIP (15)
HOP (20)
ITT (25)
SOUND PROC (26)
PICNIC (50)
MCS processor (56)
MCS/Sofac1 (57)
MCS/Sofac2 (58)
MCS/Sofac3 (59)
MCS/PCF8574 (61)
PROT/FBX (77)
PROT/Tuner (80)
(67)
8V6
(68)
DC prot (76)
AUDIO
FFS
140V
33V
tuner
FBCSO
BC (74)
I²C-F
7351
6350 27V
8V6
BC info
7438
7341
6341 33V
1V
7484
EHT info
E/W
Hor. defl.
HFB
200V
EHT
FIL
-13V
+13V
-15V
Vert. defl.
VFB
PICNIC local bus
Falconic (53)
Eagle (54)
RGB
I²C
Video control
FBSCO
LDP (73)
HOP (20)
HFB (71)
DEFLECTION
VFB (70)
6758

CL 16532149_074.eps
211201

Figure 5-8

We can divide the protections in four groups:

- Protection from I²C-busses (fast and slow) or I²C-IC errors (device errors).
- Protection from the inputs on the OTC.
- Protection from the status register of the HOP (communicated via I²C-bus).
- DC-protection (from the sound amplifiers) monitored on the OTC.

5.6.2 Protection from the I²C Bus

In normal operation, some registers of the I²C controlled ICs are refreshed every 200 ms. During this sequence, three I²C-busses (and the I²C-ICs as well) are checked.

Possible protections:

- An I²C-bus protection will take place if the SDA and SCL are whether short-circuited to ground or to each other.
- An I²C-device protection can occur, when there is malfunction in communication with one specific device, or if the power supply of the device is missing.
- A FBX- and/or Tuner circuitry protection can occur, when one of these circuits do not respond for more than 1 second (measured via I²C). The set goes in protection mode.

5.6.3 Protection from the Inputs on the OTC

If a protection is detected at an input of the OTC, all protection inputs of the OTC will be scanned every 200 milliseconds for five times. If the protection on one of the inputs is still activated after 1 sec., then the set will be put in the protection-mode. Before the scanning is started, a so-called ‘ESD refresh’ is carried out. This is done, because the interrupt on one of the inputs might be caused by a Flash or ESD. As both phenomena can harm the settings of some ICs, they are initialised again to ensure the normal picture and sound conditions of the set.

8V6 and 5V2 Protection.

The OTC senses the presence of the 8V6 and 5V2. If the 8V6 and 5V2 is not present, then an error code is stored in the error buffer.

BC (Beam Current) Protection.

A circuit on the SSP measures the beam current. If this current exceeds a certain reference level, the BC-input of the OTC is set to ‘high’ via D6350 and T7351. The error code is stored in the error buffer and the set is put in protection mode.

DC Protection.

Speaker Protection

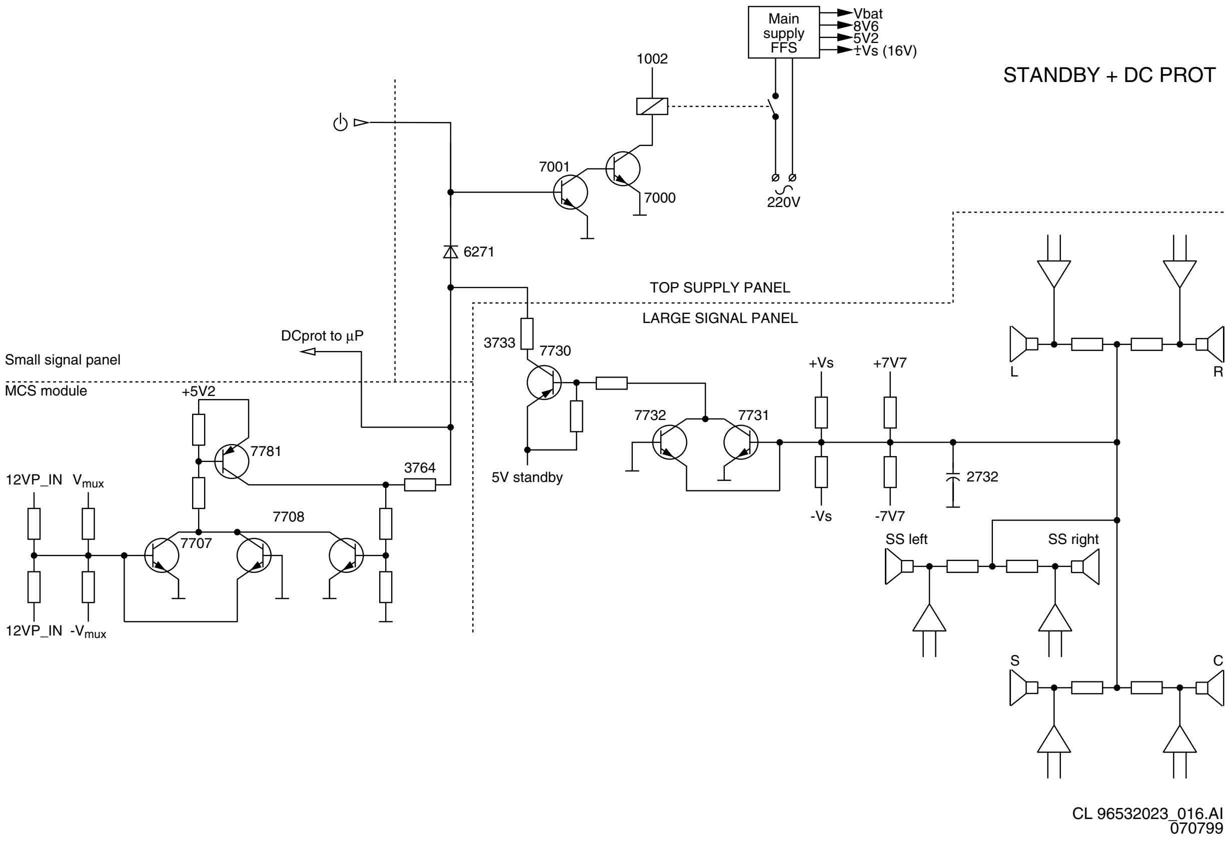

STANDBY + DC PROT
Main supply FFS
Vbat
8V6
5V2
±Vs (16V)
1002
220V
7001
7000
6271
TOP SUPPLY PANEL
LARGE SIGNAL PANEL
Small signal panel
MCS module
DCprot to µP
+5V2
7781
3764
7708
7707
12VP_IN
Vmux
-Vmux
3733
7730
7732
7731
5V standby
+Vs
+7V7
-Vs
-7V7
2732
L
R
SS left
SS right
S
C
CL 96532023_016.AI
070799

Figure 5-9

This is an important protection, measured by a circuitry on the LSP. The output of the protection circuit will slow down the power supply immediately via the opto-coupler. Then, via relay 1002, the supply is set to Standby-mode at once. To be able to store the error code in the error buffer, the protection signals are also wired to the OTC. The protection is activated in case of:

- Unbalance between $+V_S$ and $-V_S$.
- Unbalance between +7V7 and -7V7.
- V_{DC} on one of the audio amplifier outputs.
- Unbalance in the supplies of the MCS-module.

5.6.4 Protections from the Status Register of the HOP

Every 200 milliseconds the status register of the HOP is read by the OTC via I^2C. If a protection signal is detected on one of the inputs of the HOP, then the relevant error bit in the HOP register is set to 'high'. If the error bit is still 'high' after 1 s., the OTC will store the error code in the error buffer and depending on the relevancy of the error bit the set will either go into the protection-mode or not.

HFB: Horizontal Flyback

HFB Protection

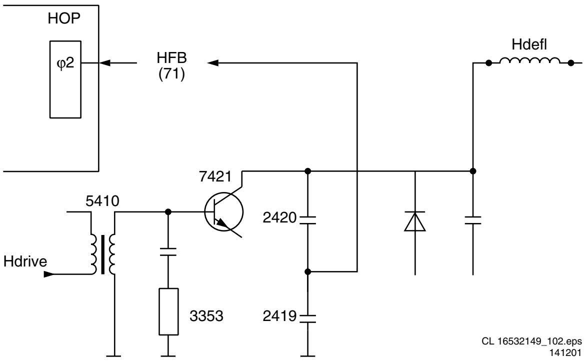
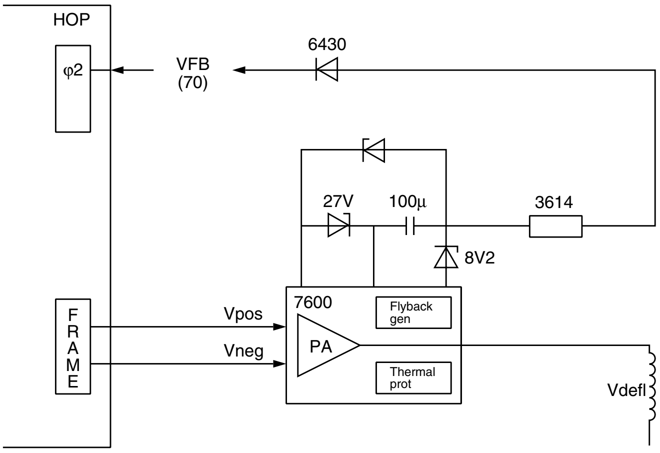

HOP
φ2
HFB
(71)
Hdefl
7421
5410
2420
Hdrive
3353
2419
CL 16532149_102.eps
141201

Figure 5-10

If the horizontal flyback is not present, then this is detected via the HOP. One status bit is set to 'high'. The error code is stored in the error buffer and the set will go into the protection mode

VFB: Vertical Flyback

VFB Protection



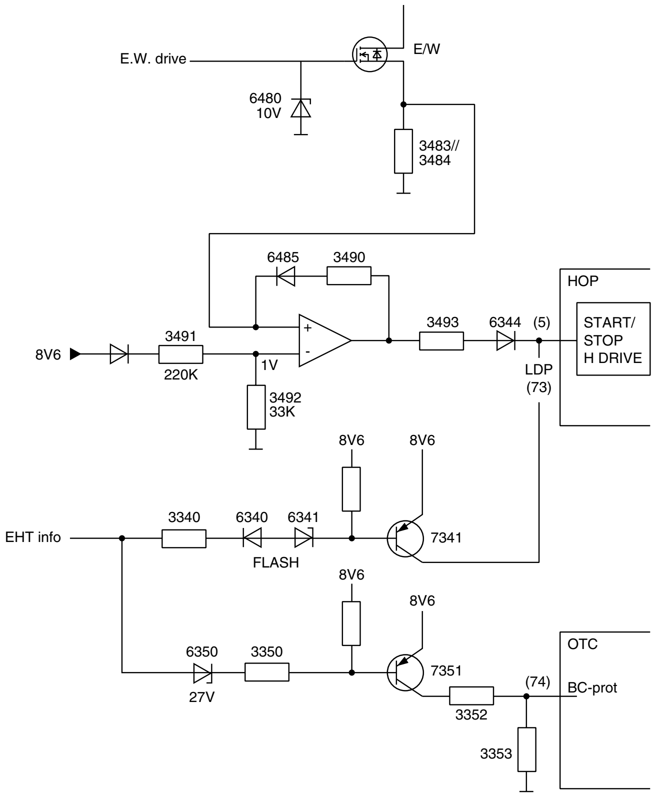
CL 16532149_103.eps
141201

Figure 5-11

The HOP will blank the screen, if the vertical flyback signals are not present at the VFB-guard input .The relevant status bit will be set in the register of the HOP. The error code is stored in the error buffer; in this case, protection is not necessary.

LDP: Line Deflection Protection

LDP Protection



CL 86532092_013.eps
031198

Figure 5-12

Two protection circuits are connected to the LDP-input of the HOP:

- **Flash detection.**
  From the EHT-info, via D6341 and T7341 a flash will stop the H-drive and line output stage immediately. The FLS-bit in the status register of the HOP is set to 'high'. As the duration of a flash is very short, the FLS-bit will be reset to 'low' again after the flash refresh, and via a slow start the set will start again.
- **LDP detection.**
  The EW-protection, coming from the line-output is also connected to the same input as above. The current through the EW-stage is measured by R3483 and R3484 on the LSP. The voltage across these precision resistors will increase in case of a failure at the line output stage. If the voltage becomes higher than 1 V, then the output of IC7484 will become 'high' and remains 'high' via D6485 and R3490. Via D6344 the H-drive will be stopped. The FLS-bit will be set to 'high' and remains 'high' by means of the software filtering even after a flash refresh. The OTC will put the set in Standby-mode. The error code is stored in the error buffer and the set gets into the protection mode.

5.7 Repair/Service Tips

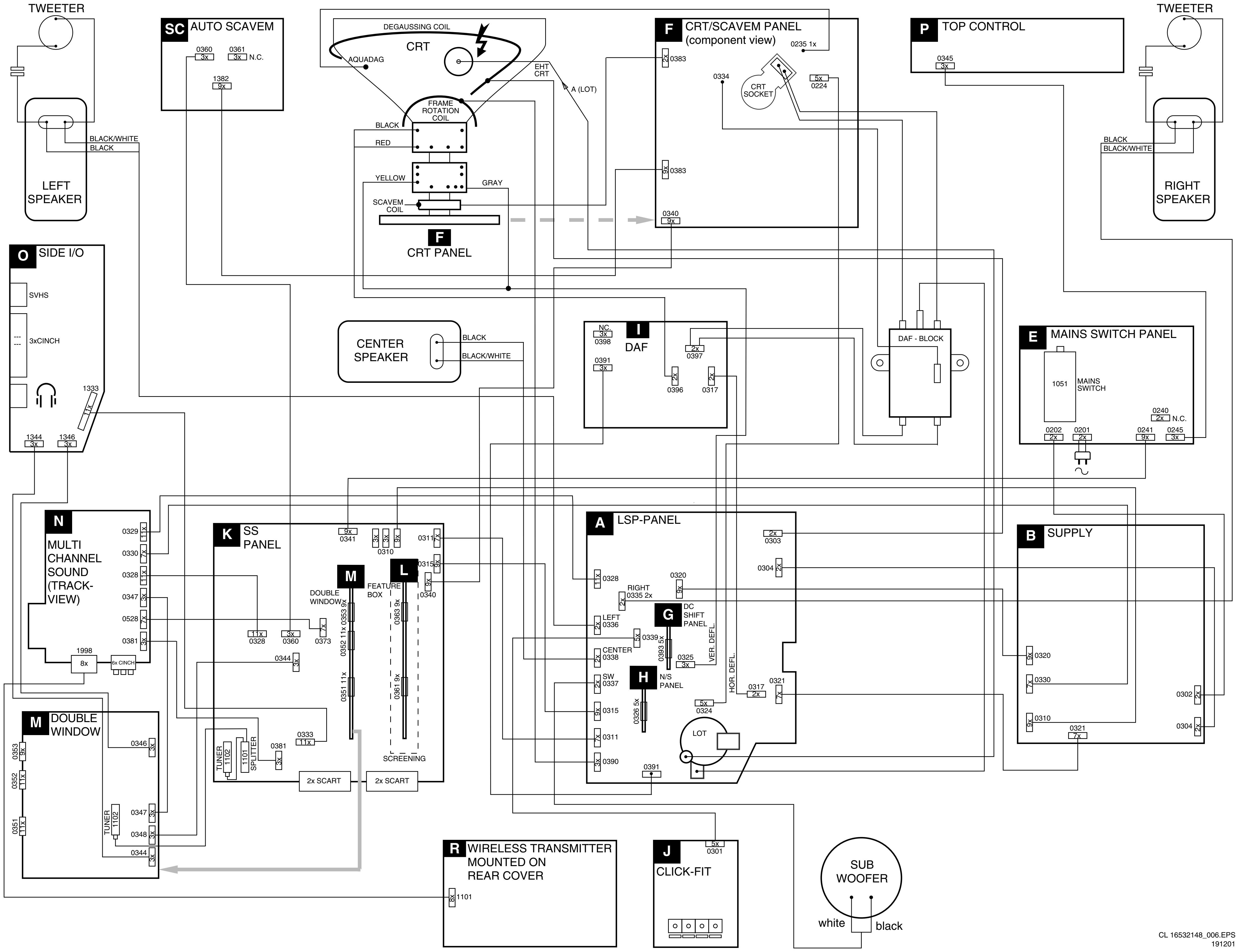
Below, you will find some additional repair/service tips:

- To have a good **service position of the FDS module**, remove the FBX module. As the set will go in protection now, you have to overrule this. Therefore, go to the Service Default Mode via the HW-entry method (short jumpers on SSP). There will be no picture, but as the signal processing of the FDS-module is done **before** the FBX processing, you can measure the necessary waveforms, and check if the module is functioning.
- To have a good **service position of the FBX module**, remove the FDS module. To keep the set functioning, you have to bypass the YUV-path now: short pins 1-7, 2-8, and 3-9 of connector 0352.
- More **User Service Tips** are described in chapter 3 of this manual (page 34 of the DFU).
- Be aware that when you switch 'off' the TV-set, the active surround speaker is going to standby after about 10 minutes.
- In Pixel Plus mode, the **OSD menus** are a little different in size. This is normal.
- When one wants to **store settings of the FDS module**, first one has to make a hardware intervention (see explanation on diagram M1). This is because of the fact that the local NVM has a write protection that is not controlled by the main microprocessor. Be sure to remove the connection after storing.
- When the set has a **'hazy' focus**, this can be related to a bad focus setting, but can also be related to a malfunctioning of the parabola modulation part of the Auto Scavem circuitry (see diagram SC).
- An easy indication if the **'Pixel Plus' feature is functioning correctly**, is via the 'Pixel Plus Demo Mode'. To activate this, press the 'Pixel Plus' button on the RC-transmitter (see also DFU).
- When **no wireless sound** is possible, or when there is too much interference, you can still enjoy Dolby surround sound by connecting the two rear loudspeakers to the TV with a stereo cinch to stereo 3.5 mm jack cable. This cable can be ordered as service part nr. 3104 311 02251 (10 m. backup cable).

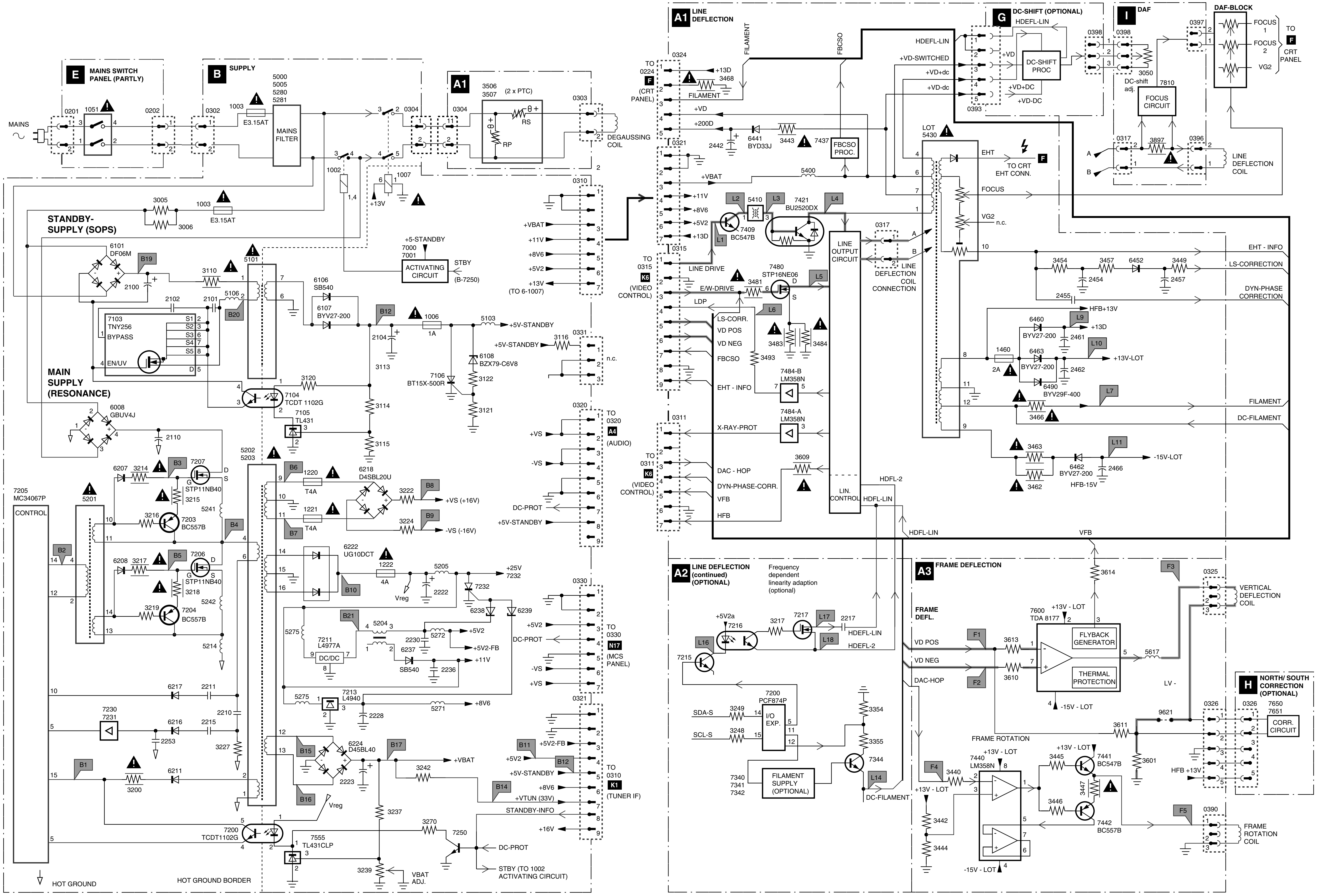
Personal Notes:

6. Wiring Diagram, Block Diagrams and Overviews

Wiring Diagram

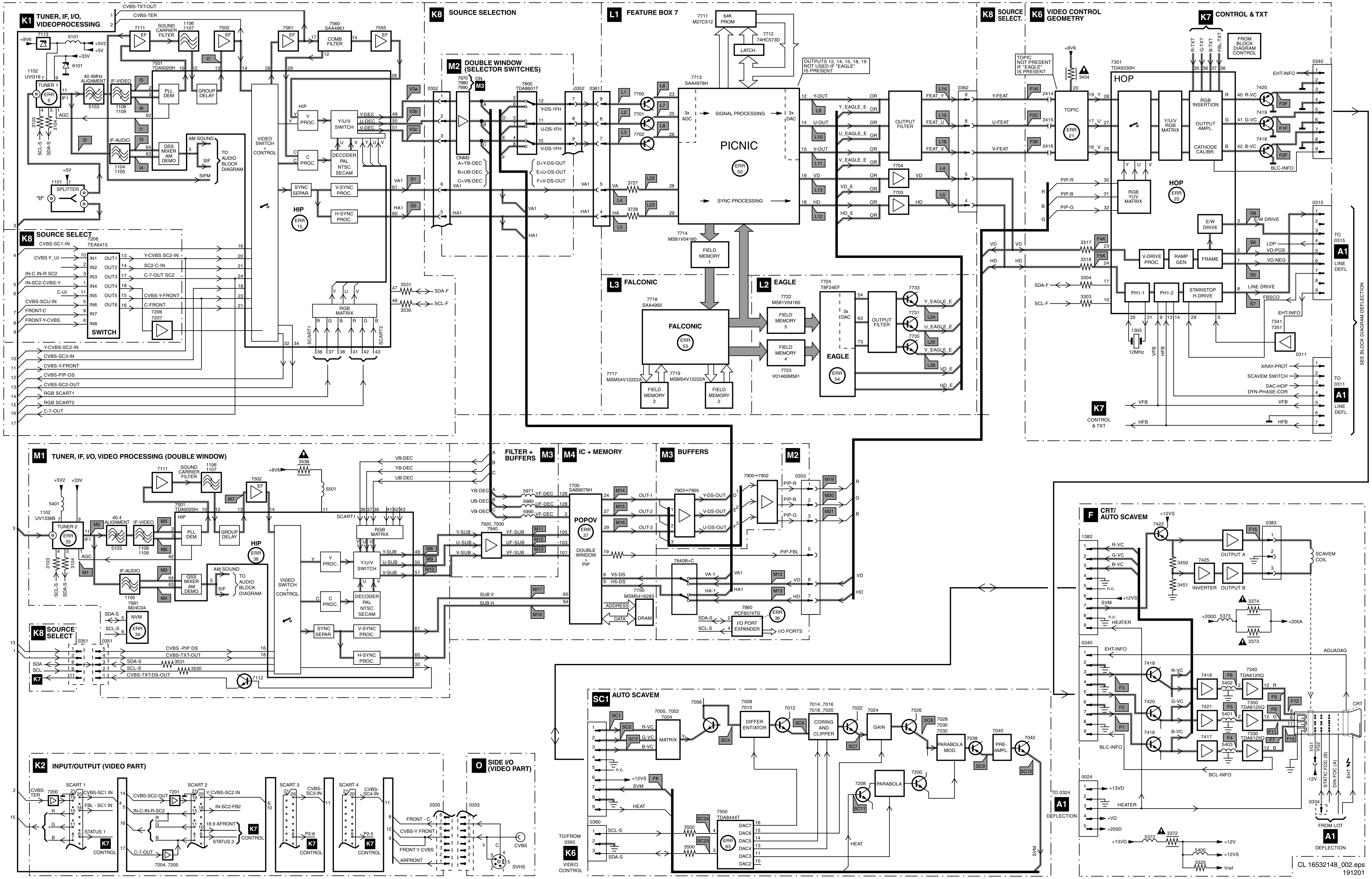

TWEETER
LEFT SPEAKER
BLACK/WHITE
BLACK
SC AUTO SCAVEM
0360 3x
0361 3x N.C.
1382 9x
DEGAUSSING COIL
CRT
AQUADAG
EHT CRT
A (LOT)
FRAME ROTATION COIL
BLACK
RED
YELLOW
GRAY
SCAVEM COIL
F CRT PANEL
F CRT/SCAVEM PANEL (component view)
0235 1x
0383 2x
0334
CRT SOCKET
0224 5x
0383 9x
0340 9x
P TOP CONTROL
0345 3x
TWEETER
RIGHT SPEAKER
BLACK
BLACK/WHITE
O SIDE I/O
SVHS
3xCINCH
1333 1x
1344 3x
1346 3x
CENTER SPEAKER
BLACK
BLACK/WHITE
I DAF
NC. 3x 0398
0391 3x
0397 2x
0396 2x
0317 2x
DAF - BLOCK
E MAINS SWITCH PANEL
1051 MAINS SWITCH
0240 2x N.C.
0202 2x
0201 2x
0241 9x
0245 3x
N MULTI CHANNEL SOUND (TRACK-VIEW)
0329 1x
0330 7x
0328 11x
0347 3x
0528 7x
0381 3x
1998 8x
6x CINCH
K SS PANEL
0341 9x
0310 3x 3x 9x
0311 7x
0315 9x
0340 9x
0328 11x
0360 3x
0373 7x
0344 3x
DOUBLE WINDOW 0353 9x
0352 11x
0351 11x
M
L
FEATURE BOX
0363 9x
0361 9x
SCREENING
TUNER 1102
SPLITTER 1101
0381 3x
0333 11x
2x SCART
2x SCART
M DOUBLE WINDOW
0353 9x
0352 11x
0351 11x
0346 3x
TUNER 1102
0347 3x
0348 3x
0344 3x
A LSP-PANEL
0303 2x
0304 2x
0328 11x
0320 9x
RIGHT 0335 2x
G DC SHIFT PANEL
LEFT 0336 2x
0339 5x
0393 5x
CENTER 0338 2x
0325 3x
VER. DEFL.
HOR. DEFL.
H N/S PANEL
SW 0337 2x
0317 2x
0321 7x
0324 5x
0315 9x
0326 5x
0311 7x
LOT
0390 3x
0391
B SUPPLY
0320 9x
0330 7x
0310 9x
0321 7x
0302 2x
0304 2x
R WIRELESS TRANSMITTER MOUNTED ON REAR COVER
1101 8x
J CLICK-FIT
0301 5x
SUB WOOFER
white
black
CL 16532148_006.EPS
191201

Block Diagram Supply and Deflection


E MAINS SWITCH PANEL (PARTLY)
B SUPPLY
A1
MAINS
0201
1051
0202
0302
1003
E3.15AT
5000 5005 5280 5281
MAINS FILTER
0304
3506 3507 (2 x PTC)
RS
RP
0303
DEGAUSSING COIL
1002
1007
+13V
STANDBY-SUPPLY (SOPS)
3005
3006
1003
E3.15AT
6101 DF06M
B19
2100
3110
5101
2102
2101
5106
B20
7103 TNY256
BYPASS
EN/UV
S1 S2 S3 S4 S5
D
6106 SB540
6107 BYV27-200
B12
1006 1A
5103
+5V-STANDBY
2104
+5-STANDBY 7000 7001
ACTIVATING CIRCUIT
STBY (B-7250)
3113
7106 BT15X-500R
6108 BZX79-C6V8
3122
3121
MAIN SUPPLY (RESONANCE)
3120
7104 TCDT 1102G
7105 TL431
3114
3115
6008 GBUV4J
2110
5202 5203
7205 MC34067P
CONTROL
B2
5201
6207 3214 B3 7207 STP11NB40
3215
3216 7203 BC557B
5241
B4
6208 3217 B5 7206 STP11NB40
3218
3219 7204 BC557B
5242
5214
B6 1220 T4A
6218 D4SBL20U
3222 B8 +VS (+16V)
1221 T4A B7
3224 B9 -VS (-16V)
6222 UG10DCT
1222 4A
Vreg
5205
2222
+25V 7232
6238
6239
B10
B21
5275
7211 L4977A
DC/DC
5204
2230
6237
5272
+5V2
+5V2-FB
SB540
2236
+11V
5275
7213 L4940
2228
5271
+8V6
6217 2211
7230 7231
6216 2215
2210
2253
3227
B1
6211
3200
B15
6224 D45BL40
B17
+VBAT
3242
2223
B16
Vreg
3237
7200 TCDT1102G
7555 TL431CLP
3270
7250
3239
VBAT ADJ.
HOT GROUND
HOT GROUND BORDER
0310
+VBAT
+11V
+8V6
+5V2
+13V (TO 6-1007)
0331
+5V-STANDBY
3116
n.c.
0320
+VS
-VS
DC-PROT
+5V-STANDBY
TO 0320
(AUDIO)
0330
+5V2
DC-PROT
-VS
+VS
TO 0330 N17 (MCS PANEL)
0321
+5V2-FB B11
+5V2 B12
+5V-STANDBY
+8V6 B14
+VTUN (33V)
STANDBY-INFO
+16V
TO 0310 K1 (TUNER IF)
DC-PROT
STBY (TO 1002 ACTIVATING CIRCUIT)
A1 LINE DEFLECTION
TO 0224 F (CRT PANEL)
0324
+13D
3468
FILAMENT
+VD
+200D
2442
6441 BYD33J
3443
7437
FBCSO PROC.
FILAMENT
FBCSO
0321
+VBAT
5400
+11V
+8V6
+5V2
+13D
L2 5410 L3
7421 BU2520DX
L4
7409 BC547B
L1
0315
TO 0315 K6 (VIDEO CONTROL)
LINE DRIVE
7480 STP16NE06
E/W-DRIVE
3481
L5
LDP
L6
LS-CORR.
VD POS
VD NEG
FBCSO
3493
3483
3484
7484-B LM358N
EHT - INFO
7484-A LM358N
X-RAY-PROT
0311
TO 0311 K6 (VIDEO CONTROL)
DAC - HOP
3609
DYN-PHASE-CORR.
VFB
HFB
LINE OUTPUT CIRCUIT
LIN. CONTROL
HDFL-2
HDFL-LIN
0317
LINE DEFLECTION COIL CONNECTION
LOT 5430
EHT
TO CRT EHT CONN.
F
FOCUS
VG2
n.c.
HDEFL-LIN
+VD-SWITCHED
+VD+dc
+VD-dc
G DC-SHIFT (OPTIONAL)
HDEFL-LIN
+VD
DC-SHIFT PROC
+VD+DC
+VD-DC
0393
0398
0398
3050
DC-shift adj.
7810
FOCUS CIRCUIT
I DAF
0397
DAF-BLOCK
FOCUS 1
FOCUS 2
VG2
TO F CRT PANEL
0317
3897
0396
A
B
LINE DEFLECTION COIL
EHT - INFO
3454
3457
6452
3449
2454
2457
LS-CORRECTION
2455
DYN-PHASE CORRECTION
HFB+13V
6460 BYV27-200
L9
+13D
2461
1460 2A
6463 BYV27-200
L10
+13V-LOT
2462
6490 BYV29F-400
L7
FILAMENT
3466
DC-FILAMENT
3463
L11
6462 BYV27-200
2466
-15V-LOT
3462
HFB-15V
HDFL-LIN
VFB
A2 LINE DEFLECTION (continued) (OPTIONAL)
Frequency dependent linearity adaption (optional)
+5V2a
7216
3217
7217
L17
2217
HDEFL-LIN
L16
L18
HDEFL-2
7215
7200 PCF874P
I/O EXP.
SDA-S 3249
SCL-S 3248
3354
3355
7344
FILAMENT SUPPLY (OPTIONAL)
7340 7341 7342
L14
DC-FILAMENT
A3 FRAME DEFLECTION
FRAME DEFL.
VD POS
VD NEG
DAC-HOP
F1
F2
3614
3613
3610
7600 TDA 8177
+13V - LOT
FLYBACK GENERATOR
THERMAL PROTECTION
-15V - LOT
5617
F3
0325
VERTICAL DEFLECTION COIL
LV -
FRAME ROTATION
3611
9621
3601
F4
3440
+13V - LOT
7440 LM358N
3445
7441 BC547B
3447
3446
7442 BC557B
3442
3444
-15V - LOT
F5
0390
FRAME ROTATION COIL
H NORTH/ SOUTH CORRECTION (OPTIONAL)
0326
0326
7650 7651
CORR. CIRCUIT
HFB +13V

CL 16532148_003.eps
201201

Block Diagram Video


K1 TUNER, IF, I/O, VIDEOPROCESSING
K8 SOURCE SELECTION
M2 DOUBLE WINDOW (SELECTOR SWITCHES)
L1 FEATURE BOX 7
K8 SOURCE SELECT.
K6 VIDEO CONTROL GEOMETRY
K7 CONTROL & TXT
K8 SOURCE SELECT
SWITCH
HIP
VIDEO SWITCH + CONTROL
PICNIC
L3 FALCONIC
FALCONIC
L2 EAGLE
EAGLE
FIELD MEMORY
TOPIC
HOP
SEE BLOCK DIAGRAM DEFLECTION
M1 TUNER, IF, I/O, VIDEO PROCESSING (DOUBLE WINDOW)
FILTER + BUFFERS M3
M4 IC + MEMORY
M3 BUFFERS
POPOV
DOUBLE WINDOW + PIP
F CRT/ AUTO SCAVEM
SC1 AUTO SCAVEM
K2 INPUT/OUTPUT (VIDEO PART)
O SIDE I/O (VIDEO PART)
A1 DEFLECTION
K6 VIDEO CONTROL
SCAVEM COIL
CRT

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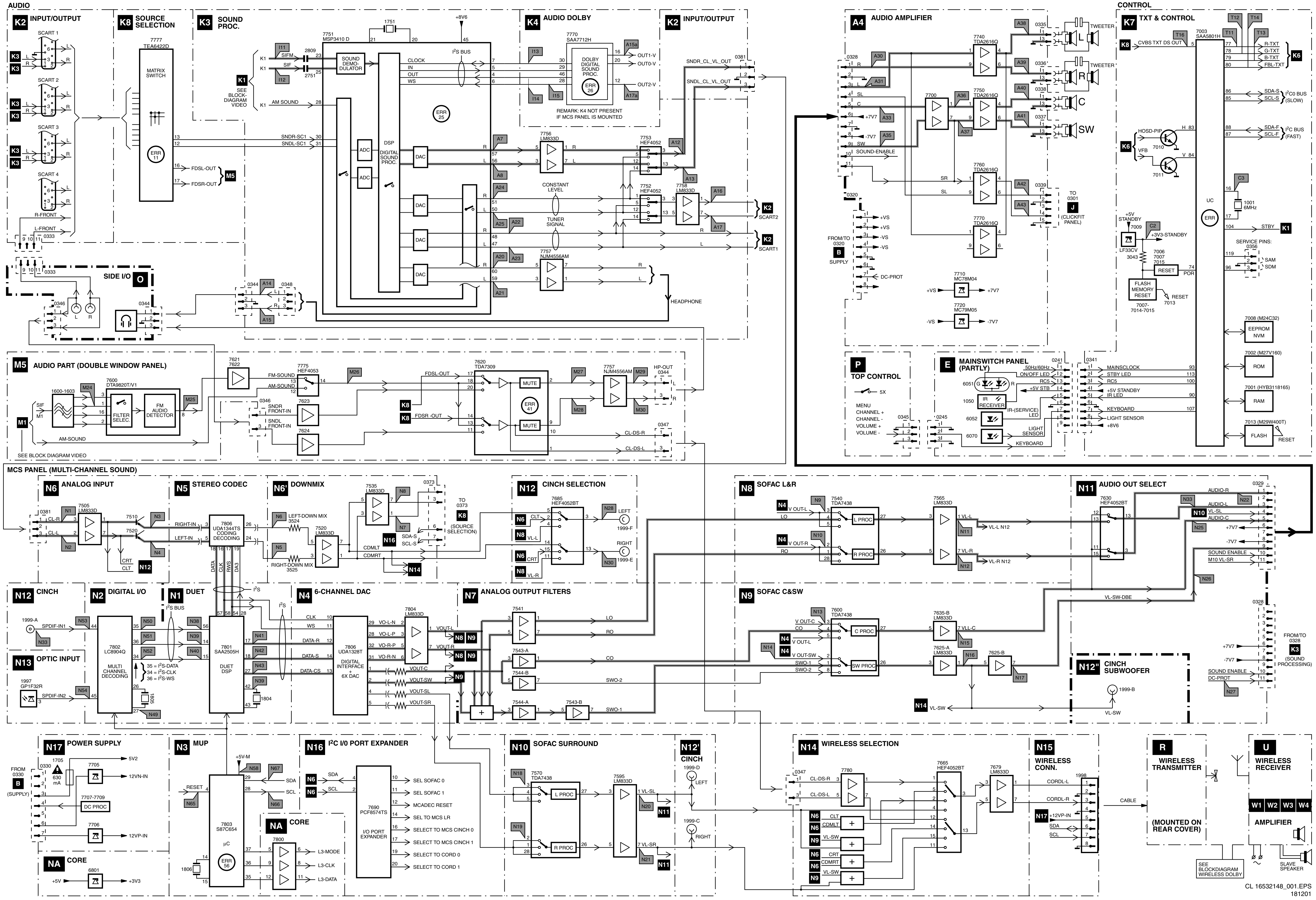
191201

Block Diagram Audio 1 (Exclusive Wireless Audio Details)


AUDIO
K2 INPUT/OUTPUT
SCART 1
SCART 2
SCART 3
SCART 4
R-FRONT
L-FRONT
K8 SOURCE SELECTION
7777 TEA6422D
MATRIX SWITCH
ERR 11
FDSL-OUT
FDSR-OUT
M5
K3 SOUND PROC.
7751 MSP3410 D
SOUND DEMO-DULATOR
DSP DIGITAL SOUND PROC.
ADC
DAC
I²S BUS
CLOCK
IN
OUT
WS
AM SOUND
SNDR-SC1
SNDL-SC1
ERR 25
SEE BLOCK-DIAGRAM VIDEO
K4 AUDIO DOLBY
7770 SAA7712H
DOLBY DIGITAL SOUND PROC.
ERR 26
OUT1-V
OUT0-V
OUT2-V
REMARK: K4 NOT PRESENT IF MCS PANEL IS MOUNTED
K2 INPUT/OUTPUT
SNDR_CL_VL_OUT
SNDL_CL_VL_OUT
7756 LM833D
7753 HEF4052
7752 HEF4052
7758 LM833D
CONSTANT LEVEL
TUNER SIGNAL
7757 NJM4556AM
SCART2
SCART1
HEADPHONE
SIDE I/O O
A4 AUDIO AMPLIFIER
7740 TDA2616Q
7750 TDA2616Q
7760 TDA2616Q
7770 TDA2616Q
7700
TWEETER
L
R
C
SW
SOUND-ENABLE
FROM/TO 0320 B SUPPLY
DC-PROT
7710 MC78M04
7720 MC79M05
TO 0301 J (CLICKFIT PANEL)
CONTROL
K7 TXT & CONTROL
7003 SAA5801H
CVBS TXT DS OUT
R-TXT
G-TXT
B-TXT
FBL-TXT
I²C0 BUS (SLOW)
I²C BUS (FAST)
HOSD-PIP
VFB
7010
7011
UC
ERR
1001 6MHz
STBY
+5V STANDBY
LF33CV
+3V3-STANDBY
RESET
POR
FLASH MEMORY RESET
SERVICE PINS: 0356
SAM
SDM
7008 (M24C32) EEPROM NVM
7002 (M27V160) ROM
7001 (HYB3118165) RAM
7013 (M29W400T) FLASH
M5 AUDIO PART (DOUBLE WINDOW PANEL)
7600 DTA9820T/V1
FILTER SELEC.
FM AUDIO DETECTOR
AM-SOUND
SEE BLOCK DIAGRAM VIDEO
7621 7622
7775 HEF4053
FM-SOUND
AM-SOUND
SNDR FRONT-IN
SNDL FRONT-IN
7623
7624
7620 TDA7309
MUTE
ERR 41
FDSL-OUT
FDSR-OUT
7757 NJM4556AM
HP-OUT 0344
CL-DS-R
CL-DS-L
P TOP CONTROL
MENU
CHANNEL +
CHANNEL -
VOLUME +
VOLUME -
E MAINSWITCH PANEL (PARTLY)
50Hz/60Hz
ON/OFF LED
RC5
+5V STB
IR RECEIVER
IR-(SERVICE) LED
LIGHT SENSOR
KEYBOARD
MAINSCLOCK
STBY LED
IR LED
+5V STANDBY
LIGHT SENSOR
+8V6
MCS PANEL (MULTI-CHANNEL SOUND)
N6 ANALOG INPUT
7505 LM833D
N5 STEREO CODEC
7806 UDA1344TS CODING DECODING
N6' DOWNMIX
LEFT-DOWN MIX
RIGHT-DOWN MIX
7520 LM833D
7535 LM833D
CDMLT
CDMRT
TO 0373 K8 (SOURCE SELECTION)
N12 CINCH SELECTION
7685 HEF4052BT
LEFT 1999-F
RIGHT 1999-E
N8 SOFAC L&R
7540 TDA7438
L PROC
R PROC
7565 LM833D
N11 AUDIO OUT SELECT
7630 HEF4052BT
AUDIO-R
AUDIO-L
AUDIO-C
SOUND ENABLE
M10 VL-SR
N12 CINCH
SPDIF-IN1
N13 OPTIC INPUT
1997 GP1F32R
SPDIF-IN2
N2 DIGITAL I/O
7802 LC8904Q
MULTI CHANNEL DECODING
35 = I²S-DATA
34 = I²S-CLK
36 = I²S-WS
N1 DUET
7801 SAA2505H
DUET DSP
I²S BUS
N4 6-CHANNEL DAC
7806 UDA1328T
DIGITAL INTERFACE + 6X DAC
CLK
WS
DATA-R
DATA-S
DATA-CS
7804 LM833D
VOUT-L
VOUT-R
VOUT-C
VOUT-SW
VOUT-SL
VOUT-SR
N7 ANALOG OUTPUT FILTERS
7541
7543-A
7544-B
7544-A
7543-B
LO
RO
CO
SWO-2
SWO-1
N9 SOFAC C&SW
7600 TDA7438
C PROC
SW PROC
7635-B LM833D
7625-A LM833D
7625-B
N12" CINCH SUBWOOFER
1999-B
VL-SW
FROM/TO 0328 K3 (SOUND PROCESSING)
N17 POWER SUPPLY
FROM 0330 B (SUPPLY)
630 mA
5V2
12VN-IN
DC PROC
12VP-IN
NA CORE
6801
+5V
+3V3
N3 MUP
7803 S87C654
µC
ERR 56
RESET
SDA
SCL
NA CORE
7800
L3-MODE
L3-CLK
L3-DATA
N16 I²C I/0 PORT EXPANDER
7690 PCF8574TS
I/O PORT EXPANDER
SEL SOFAC 0
SEL SOFAC 1
MCADEC RESET
SEL TO MCS LR
SELECT TO MCS CINCH 0
SELECT TO MCS CINCH 1
SELECT TO CORD 0
SELECT TO CORD 1
N10 SOFAC SURROUND
7570 TDA7438
7595 LM833D
VL-SL
VL-SR
N12' CINCH
1999-D LEFT
1999-C RIGHT
N14 WIRELESS SELECTION
7780
7665 HEF4052BT
7679 LM833D
N15 WIRELESS CONN.
CORDL-L
CORDL-R
12VP-IN
CABLE
R WIRELESS TRANSMITTER (MOUNTED ON REAR COVER)
U WIRELESS RECEIVER
W1 W2 W3 W4
AMPLIFIER
SLAVE SPEAKER
SEE BLOCKDIAGRAM WIRELESS DOLBY
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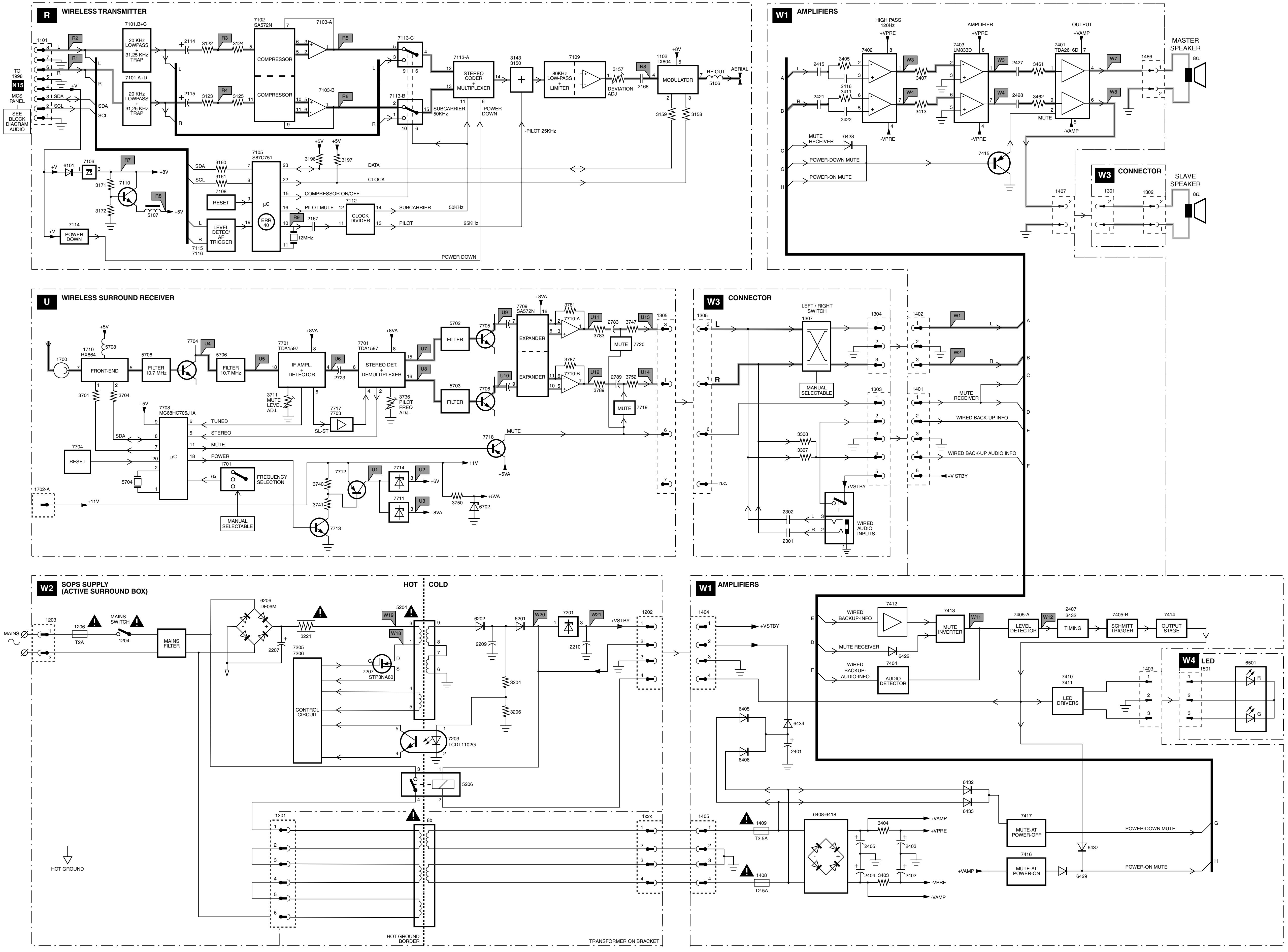
Block Diagram Audio 2 (Wireless Audio Details)


R WIRELESS TRANSMITTER
TO 1998 N15 MCS PANEL
SEE BLOCK DIAGRAM AUDIO
1101
R2
R1
7101.B+C 20 KHz LOWPASS + 31,25 KHz TRAP
7101.A+D 20 KHz LOWPASS + 31,25 KHz TRAP
7102 SA572N
COMPRESSOR
COMPRESSOR
7103-A
7103-B
R3
R4
R5
R6
7113-C
7113-B
7113-A
STEREO CODER + MULTIPLEXER
SUBCARRIER 50KHz
-POWER DOWN
3143 3150
7109
80KHz LOW-PASS + LIMITER
DEVIATION ADJ
N8
1102 TX804
MODULATOR
RF-OUT
AERIAL
-PILOT 25KHz
7105 S87C751
µC
ERR 40
RESET
LEVEL DETEC/ AF TRIGGER
7106
R7
7110
R8
5107
7114 POWER DOWN
DATA
CLOCK
COMPRESSOR ON/OFF
PILOT MUTE
SUBCARRIER 50KHz
PILOT 25KHz
7112 CLOCK DIVIDER
12MHz
POWER DOWN
W1 AMPLIFIERS
HIGH PASS 120Hz
AMPLIFIER
OUTPUT
7402
7403 LM833D
7401 TDA2616D
W3
W4
W7
W8
MASTER SPEAKER 8Ω
MUTE RECEIVER
POWER-DOWN MUTE
POWER-ON MUTE
7415
MUTE
W3 CONNECTOR
SLAVE SPEAKER 8Ω
1407
1301
1302
U WIRELESS SURROUND RECEIVER
1700
1710 RX864
FRONT-END
5706 FILTER 10.7 MHz
7704
U4
FILTER 10.7 MHz
U5
7701 TDA1597
IF AMPL. + DETECTOR
U6
STEREO DET. + DEMULTIPLEXER
U7
U8
5702 FILTER
5703 FILTER
7705
7706
U9
U10
7709 SA572N
EXPANDER
EXPANDER
7710-A
7710-B
U11
U12
U13
U14
MUTE 7720
MUTE 7719
1305
3711 MUTE LEVEL ADJ.
3736 PILOT FREQ ADJ.
7717 7703
SL-ST
7708 MC68HC705J1A
µC
TUNED
STEREO
MUTE
POWER
7704 RESET
1701 FREQUENCY SELECTION
MANUAL SELECTABLE
1702-A
+11V
7712
7714
7711
U1
U2
U3
7713
7718
W3 CONNECTOR
LEFT / RIGHT SWITCH
1307
MANUAL SELECTABLE
1304
1402
1303
1401
W1
W2
MUTE RECEIVER
WIRED BACK-UP INFO
WIRED BACK-UP AUDIO INFO
+V STBY
n.c.
WIRED AUDIO INPUTS
W2 SOPS SUPPLY (ACTIVE SURROUND BOX)
HOT
COLD
MAINS
1203
1206 T2A
MAINS SWITCH
1204
MAINS FILTER
6206 DF06M
3221
7205 7206
CONTROL CIRCUIT
7207 STP3NA60
W19
W18
5204
6202
6201
W20
7201
W21
+VSTBY
1202
7203 TCDT1102G
5206
1201
8b
1xxx
HOT GROUND
HOT GROUND BORDER
TRANSFORMER ON BRACKET
W1 AMPLIFIERS
1404
+VSTBY
6405
6406
6434
2401
1405
1409 T2.5A
1408 T2.5A
6408-6418
+VAMP
+VPRE
-VPRE
-VAMP
7412 WIRED BACKUP-INFO
MUTE RECEIVER
6422
7404 WIRED BACKUP-AUDIO-INFO AUDIO DETECTOR
7413 MUTE INVERTER
W11
7405-A LEVEL DETECTOR
W12
2407 3432 TIMING
7405-B SCHMITT TRIGGER
7414 OUTPUT STAGE
7410 7411 LED DRIVERS
1403
W4 LED
1501
6501
6432
6433
7417 MUTE-AT POWER-OFF
7416 MUTE-AT POWER-ON
6437
6429
POWER-DOWN MUTE
POWER-ON MUTE

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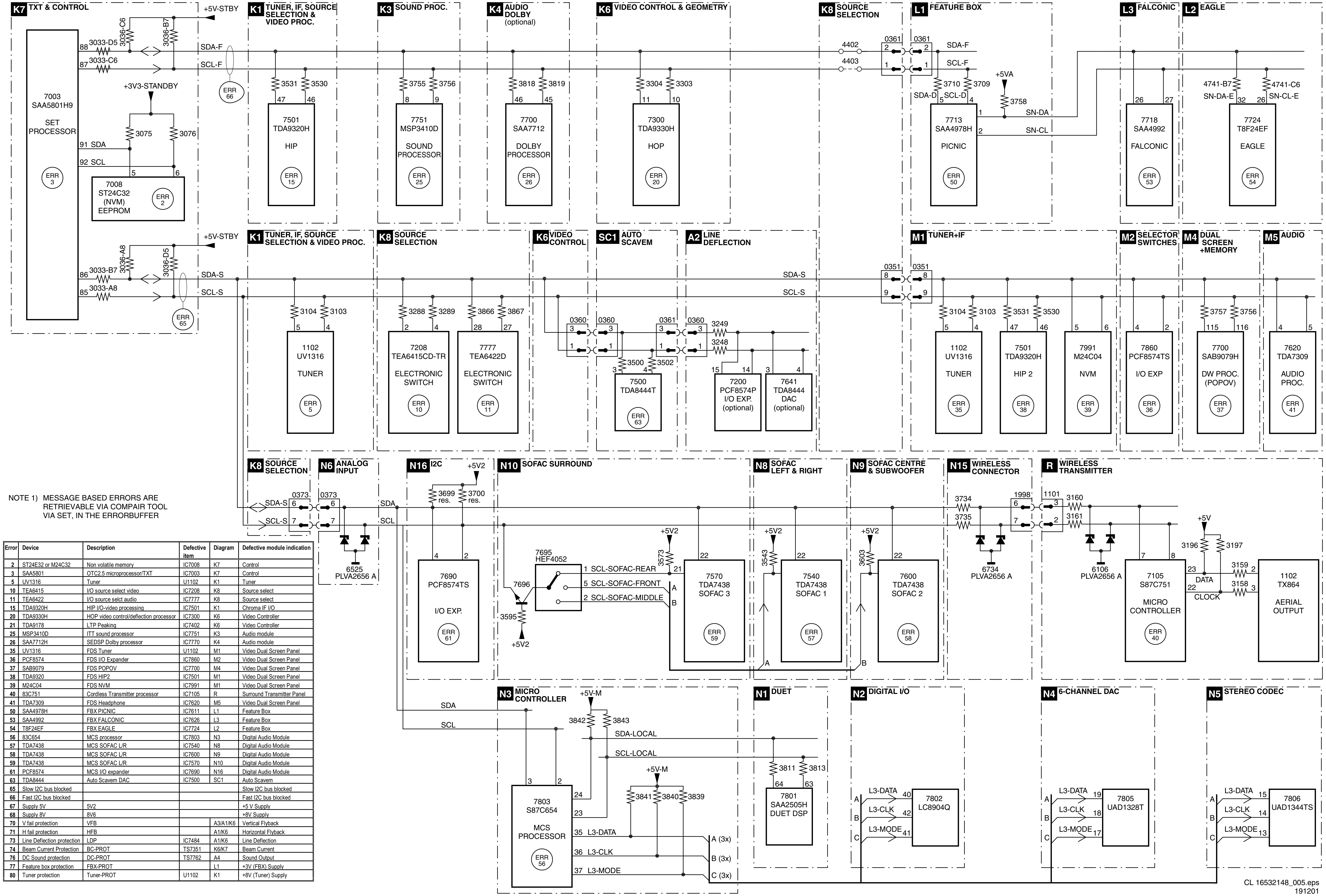
I^2C IC's overview


K7 TXT & CONTROL
+5V-STBY
7003
SAA5801H9
SET PROCESSOR
ERR 3
3033-D5
3033-C6
3036-C6
3036-B7
88
87
SDA-F
SCL-F
ERR 66
+3V3-STANDBY
3075
3076
91 SDA
92 SCL
5
6
7008
ST24C32
(NVM)
EEPROM
ERR 2
K1 TUNER, IF, SOURCE SELECTION & VIDEO PROC.
3531
3530
47
46
7501
TDA9320H
HIP
ERR 15
K3 SOUND PROC.
3755
3756
8
9
7751
MSP3410D
SOUND PROCESSOR
ERR 25
K4 AUDIO DOLBY (optional)
3818
3819
46
45
7700
SAA7712
DOLBY PROCESSOR
ERR 26
K6 VIDEO CONTROL & GEOMETRY
3304
3303
11
10
7300
TDA9330H
HOP
ERR 20
K8 SOURCE SELECTION
4402
4403
0361
L1 FEATURE BOX
SDA-F
SCL-F
+5VA
3710
3709
3758
SDA-D
SCL-D
7713
SAA4978H
PICNIC
ERR 50
SN-DA
SN-CL
L3 FALCONIC
26
27
7718
SAA4992
FALCONIC
ERR 53
L2 EAGLE
4741-B7
4741-C6
SN-DA-E
SN-CL-E
32
26
7724
T8F24EF
EAGLE
ERR 54
+5V-STBY
3033-B7
3033-A8
3036-A8
3036-D5
86
85
SDA-S
SCL-S
ERR 65
K1 TUNER, IF, SOURCE SELECTION & VIDEO PROC.
3104
3103
1102
UV1316
TUNER
ERR 5
K8 SOURCE SELECTION
3288
3289
3866
3867
7208
TEA6415CD-TR
ELECTRONIC SWITCH
ERR 10
7777
TEA6422D
ELECTRONIC SWITCH
ERR 11
K6 VIDEO CONTROL
0360
SC1 AUTO SCAVEM
0361
3500
3502
7500
TDA8444T
ERR 63
A2 LINE DEFLECTION
3249
3248
7200
PCF8574P
I/O EXP.
(optional)
7641
TDA8444
DAC
(optional)
0351
M1 TUNER+IF
3104
3103
3531
3530
1102
UV1316
TUNER
ERR 35
7501
TDA9320H
HIP 2
ERR 38
7991
M24C04
NVM
ERR 39
M2 SELECTOR SWITCHES
7860
PCF8574TS
I/O EXP
ERR 36
M4 DUAL SCREEN +MEMORY
3757
3756
115
116
7700
SAB9079H
DW PROC.
(POPOV)
ERR 37
M5 AUDIO
7620
TDA7309
AUDIO PROC.
ERR 41
K8 SOURCE SELECTION
0373
SDA-S
SCL-S
N6 ANALOG INPUT
6525
PLVA2656 A
N16 I2C
+5V2
3699 res.
3700 res.
7690
PCF8574TS
I/O EXP.
ERR 61
N10 SOFAC SURROUND
7695
HEF4052
7696
3595
+5V2
1 SCL-SOFAC-REAR
5 SCL-SOFAC-FRONT
2 SCL-SOFAC-MIDDLE
3573
7570
TDA7438
SOFAC 3
ERR 59
N8 SOFAC LEFT & RIGHT
3543
7540
TDA7438
SOFAC 1
ERR 57
N9 SOFAC CENTRE & SUBWOOFER
3603
7600
TDA7438
SOFAC 2
ERR 58
N15 WIRELESS CONNECTOR
3734
3735
1998
6734
PLVA2656 A
R WIRELESS TRANSMITTER
1101
3160
3161
6106
PLVA2656 A
+5V
3196
3197
3159
3158
7105
S87C751
MICRO CONTROLLER
ERR 40
DATA
CLOCK
1102
TX864
AERIAL OUTPUT
SDA
SCL
N3 MICRO CONTROLLER
+5V-M
3842
3843
SDA-LOCAL
SCL-LOCAL
3841
3840
3839
7803
S87C654
MCS PROCESSOR
ERR 56
35 L3-DATA
36 L3-CLK
37 L3-MODE
A (3x)
B (3x)
C (3x)
N1 DUET
3811
3813
7801
SAA2505H
DUET DSP
N2 DIGITAL I/O
L3-DATA
L3-CLK
L3-MODE
7802
LC8904Q
N4 6-CHANNEL DAC
7805
UAD1328T
N5 STEREO CODEC
7806
UAD1344TS

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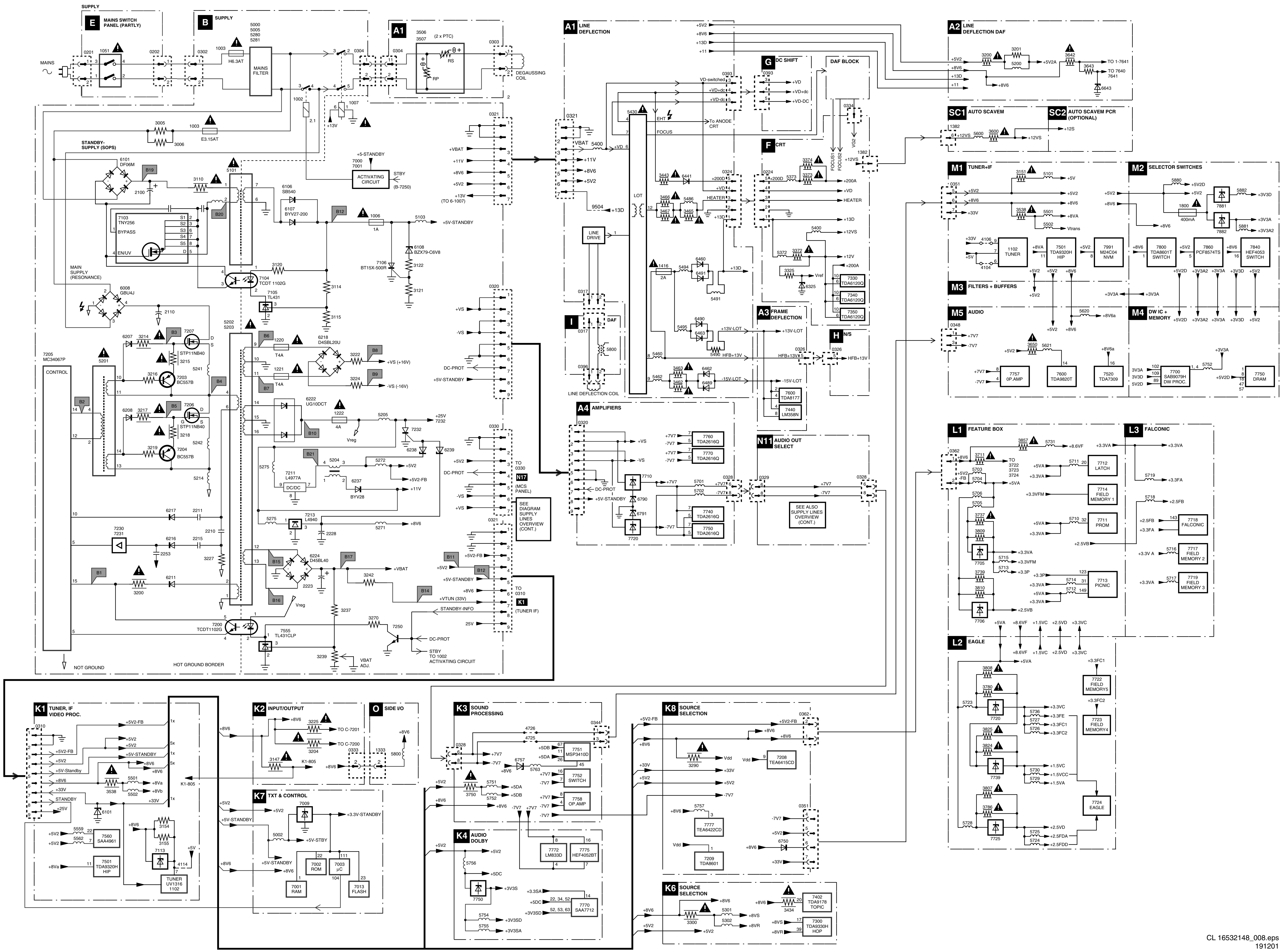
NOTE 1) MESSAGE BASED ERRORS ARE RETRIEVABLE VIA COMPAIR TOOL VIA SET, IN THE ERRORBUFFER

Error	Device	Description	Defective item	Diagram	Defective module indication
2	ST24E32 or M24C32	Non volatile memory	IC7008	K7	Control
3	SAA5801	OTC2.5 microprocessor/TXT	IC7003	K7	Control
5	UV1316	Tuner	U1102	K1	Tuner
10	TEA6415	I/O source select video	IC7208	K8	Source select
11	TEA6422	I/O source selct audio	IC7777	K8	Source select
15	TDA9320H	HIP I/O-video processing	IC7501	K1	Chroma IF I/O
20	TDA9330H	HOP video control/deflection processor	IC7300	K6	Video Controller
21	TDA9178	LTP Peaking	IC7402	K6	Video Controller
25	MSP3410D	ITT sound processor	IC7751	K3	Audio module
26	SAA7712H	SEDSP Dolby processor	IC7770	K4	Audio module
35	UV1316	FDS Tuner	U1102	M1	Video Dual Screen Panel
36	PCF8574	FDS I/O Expander	IC7860	M2	Video Dual Screen Panel
37	SAB9079	FDS POPOV	IC7700	M4	Video Dual Screen Panel
38	TDA9320	FDS HIP2	IC7501	M1	Video Dual Screen Panel
39	M24C04	FDS NVM	IC7991	M1	Video Dual Screen Panel
40	83C751	Cordless Transmitter processor	IC7105	R	Surround Transmitter Panel
41	TDA7309	FDS Headphone	IC7620	M5	Video Dual Screen Panel
50	SAA4978H	FBX PICNIC	IC7611	L1	Feature Box
53	SAA4992	FBX FALCONIC	IC7626	L3	Feature Box
54	T8F24EF	FBX EAGLE	IC7724	L2	Feature Box
56	83C654	MCS processor	IC7803	N3	Digital Audio Module
57	TDA7438	MCS SOFAC L/R	IC7540	N8	Digital Audio Module
58	TDA7438	MCS SOFAC L/R	IC7600	N9	Digital Audio Module
59	TDA7438	MCS SOFAC L/R	IC7570	N10	Digital Audio Module
61	PCF8574	MCS I/O expander	IC7690	N16	Digital Audio Module
63	TDA8444	Auto Scavem DAC	IC7500	SC1	Auto Scavem
65	Slow I2C bus blocked				Slow I2C bus blocked
66	Fast I2C bus blocked				Fast I2C bus blocked
67	Supply 5V	5V2			+5 V Supply
68	Supply 8V	8V6			+8V Supply
70	V fail protection	VFB		A3/A1/K6	Vertical Flyback
71	H fail protection	HFB		A1/K6	Horizontal Flyback
73	Line Deflection protection	LDP	IC7484	A1/K6	Line Deflection
74	Beam Current Protection	BC-PROT	TS7351	K6/K7	Beam Current
76	DC Sound protection	DC-PROT	TS7762	A4	Sound Output
77	Feature box protection	FBX-PROT		L1	+3V (FBX) Supply
80	Tuner protection	Tuner-PROT	U1102	K1	+8V (Tuner) Supply

Supply Lines Overview (Part 1)


SUPPLY
E MAINS SWITCH PANEL (PARTLY)
B SUPPLY
A1
MAINS
MAINS FILTER
DEGAUSSING COIL
STANDBY-SUPPLY (SOPS)
MAIN SUPPLY (RESONANCE)
7103 TNY256
7104 TCDT 1102G
7105 TL431
7205 MC34067P
CONTROL
7200 TCDT1102G
7555 TL431CLP
ACTIVATING CIRCUIT
+5V-STANDBY
+VS (+16V)
-VS (-16V)
+25V
+VBAT
+VTUN (33V)
STANDBY-INFO
DC-PROT
VBAT ADJ.
NOT GROUND
HOT GROUND BORDER
TO 0330 N17 (MCS PANEL)
SEE DIAGRAM SUPPLY LINES OVERVIEW (CONT.)
TO 0310 K1 (TUNER IF)
A1 LINE DEFLECTION
G DC SHIFT
DAF BLOCK
F CRT
I DAF
LINE DEFLECTION COIL
LINE DRIVE
LOT
EHT
FOCUS
To ANODE CRT
HEATER
A3 FRAME DEFLECTION
H N/S
A4 AMPLIFIERS
N11 AUDIO OUT SELECT
SEE ALSO SUPPLY LINES OVERVIEW (CONT.)
A2 LINE DEFLECTION DAF
SC1 AUTO SCAVEM
SC2 AUTO SCAVEM PCR (OPTIONAL)
M1 TUNER+IF
M2 SELECTOR SWITCHES
M3 FILTERS + BUFFERS
M5 AUDIO
M4 DW IC + MEMORY
L1 FEATURE BOX
L3 FALCONIC
L2 EAGLE
K1 TUNER, IF VIDEO PROC.
K2 INPUT/OUTPUT
O SIDE I/O
K7 TXT & CONTROL
K3 SOUND PROCESSING
K4 AUDIO DOLBY
K8 SOURCE SELECTION
K6 SOURCE SELECTION

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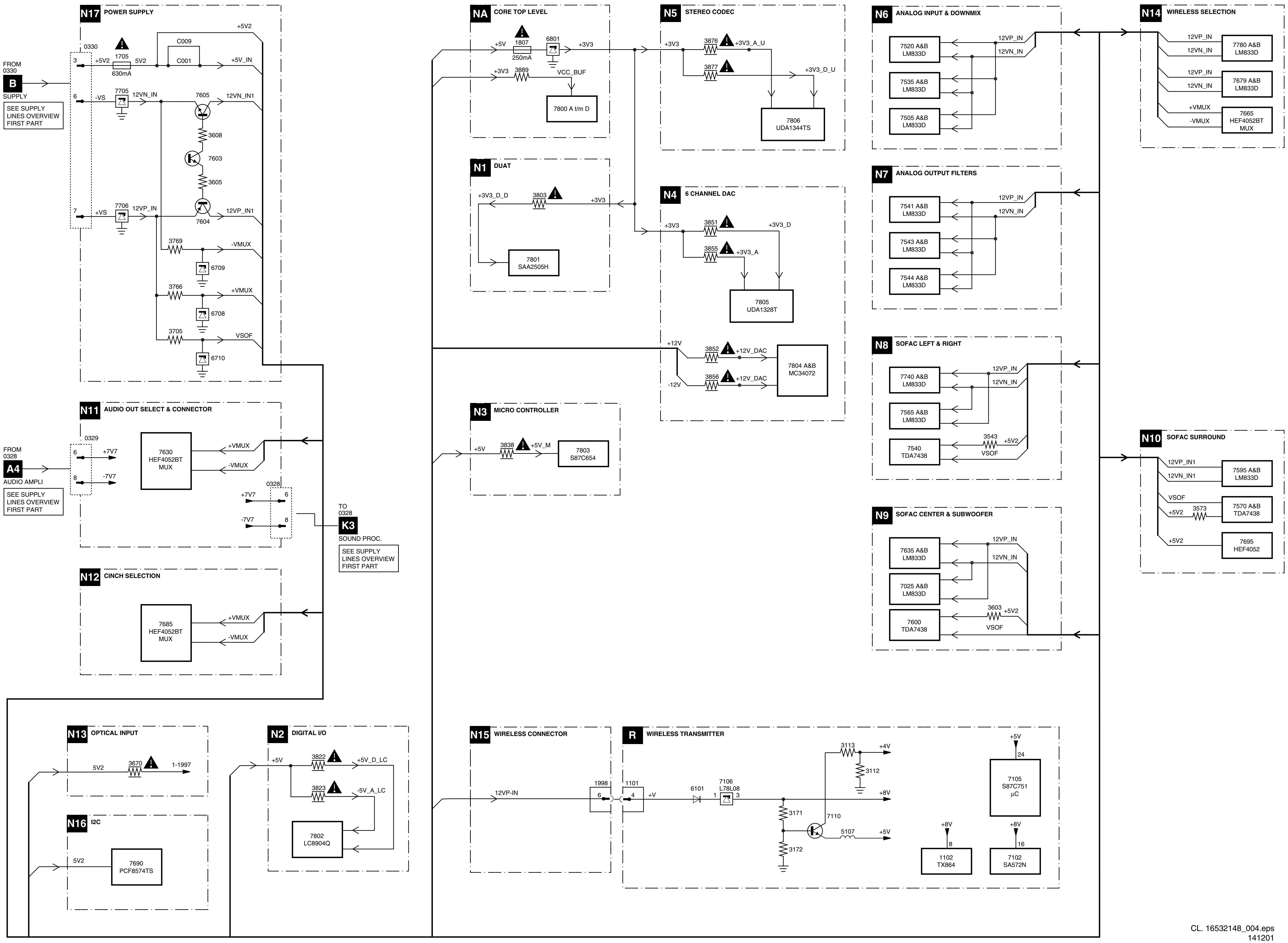
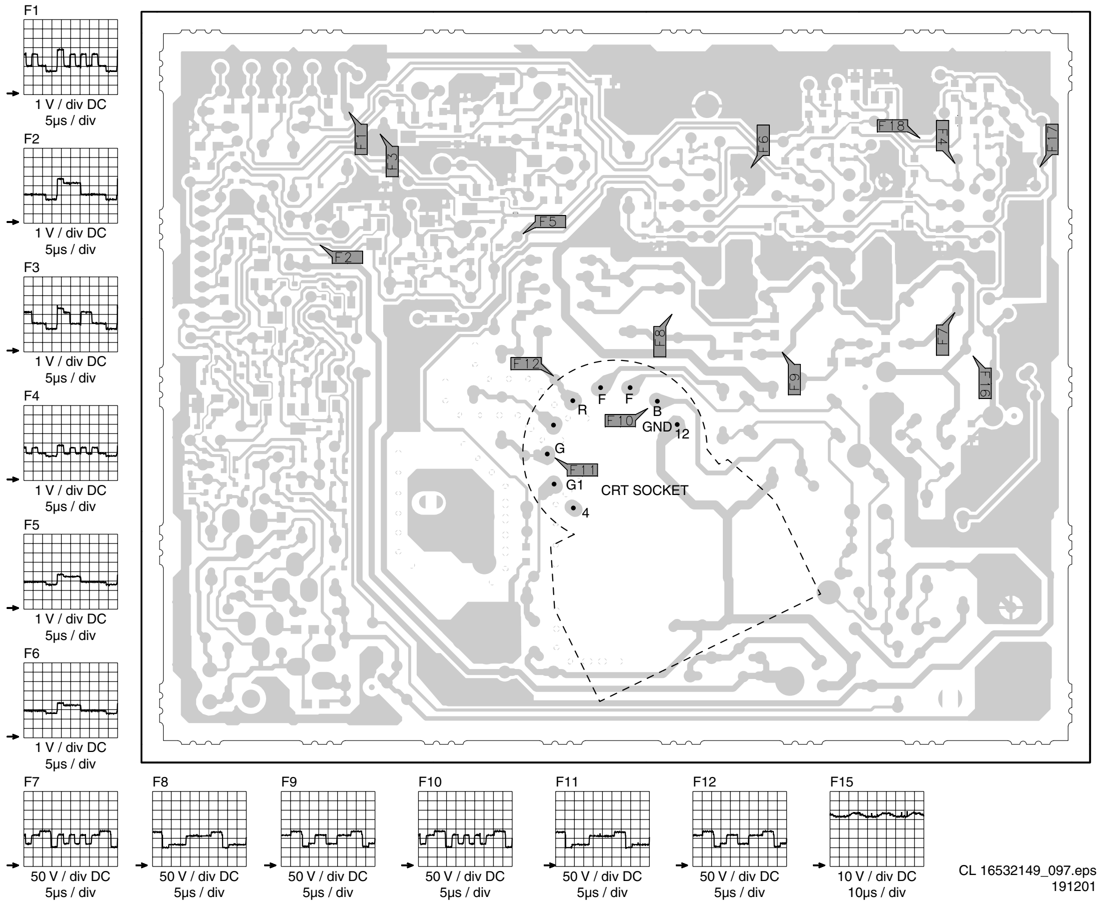
Supply Lines Overview (Part 2)


N17 POWER SUPPLY
FROM 0330
B
SUPPLY
SEE SUPPLY LINES OVERVIEW FIRST PART
0330
+5V2
1705
630mA
5V2
C009
C001
+5V_IN
+5V2
-VS
7705
12VN_IN
7605
12VN_IN1
3608
7603
3605
+VS
7706
12VP_IN
7604
12VP_IN1
3769
-VMUX
6709
3766
+VMUX
6708
3705
VSOF
6710
N11 AUDIO OUT SELECT & CONNECTOR
FROM 0328
A4
AUDIO AMPLI
SEE SUPPLY LINES OVERVIEW FIRST PART
0329
+7V7
-7V7
7630 HEF4052BT MUX
+VMUX
-VMUX
0328
TO 0328
K3
SOUND PROC.
SEE SUPPLY LINES OVERVIEW FIRST PART
N12 CINCH SELECTION
7685 HEF4052BT MUX
N13 OPTICAL INPUT
5V2
3670
1-1997
N16 I2C
7690 PCF8574TS
N2 DIGITAL I/O
+5V
3822
+5V_D_LC
3823
-5V_A_LC
7802 LC8904Q
NA CORE TOP LEVEL
+5V
1807
250mA
6801
+3V3
3889
VCC_BUF
7800 A t/m D
N1 DUAT
+3V3_D_D
3803
7801 SAA2505H
N3 MICRO CONTROLLER
3838
+5V_M
7803 S87C654
N15 WIRELESS CONNECTOR
12VP-IN
1998
N5 STEREO CODEC
3876
+3V3_A_U
3877
+3V3_D_U
7806 UDA1344TS
N4 6 CHANNEL DAC
3851
+3V3_D
3855
+3V3_A
7805 UDA1328T
+12V
3852
+12V_DAC
-12V
3856
7804 A&B MC34072
R WIRELESS TRANSMITTER
1101
+V
6101
7106 L78L08
3113
+4V
3112
+8V
3171
7110
5107
3172
7105 S87C751 µC
7102 SA572N
1102 TX864
N6 ANALOG INPUT & DOWNMIX
7520 A&B LM833D
7535 A&B LM833D
7505 A&B LM833D
N7 ANALOG OUTPUT FILTERS
7541 A&B LM833D
7543 A&B LM833D
7544 A&B LM833D
N8 SOFAC LEFT & RIGHT
7740 A&B LM833D
7565 A&B LM833D
7540 TDA7438
3543
N9 SOFAC CENTER & SUBWOOFER
7635 A&B LM833D
7025 A&B LM833D
7600 TDA7438
3603
N14 WIRELESS SELECTION
7780 A&B LM833D
7679 A&B LM833D
7665 HEF4052BT MUX
N10 SOFAC SURROUND
7595 A&B LM833D
7570 A&B TDA7438
3573
7695 HEF4052

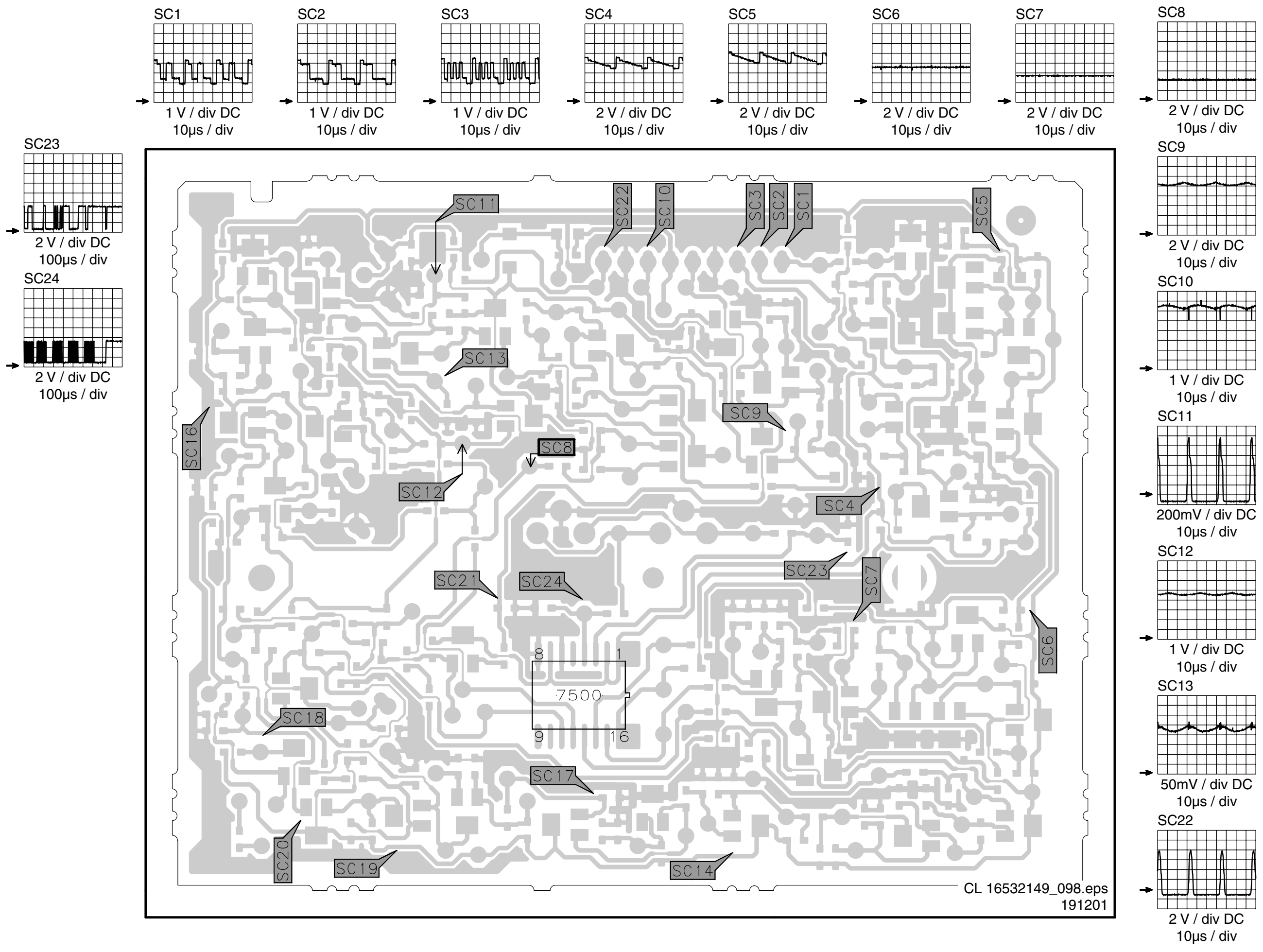
CL. 16532148_004.eps
141201

CRT / SCAVEM panel (F) (Copper Side)

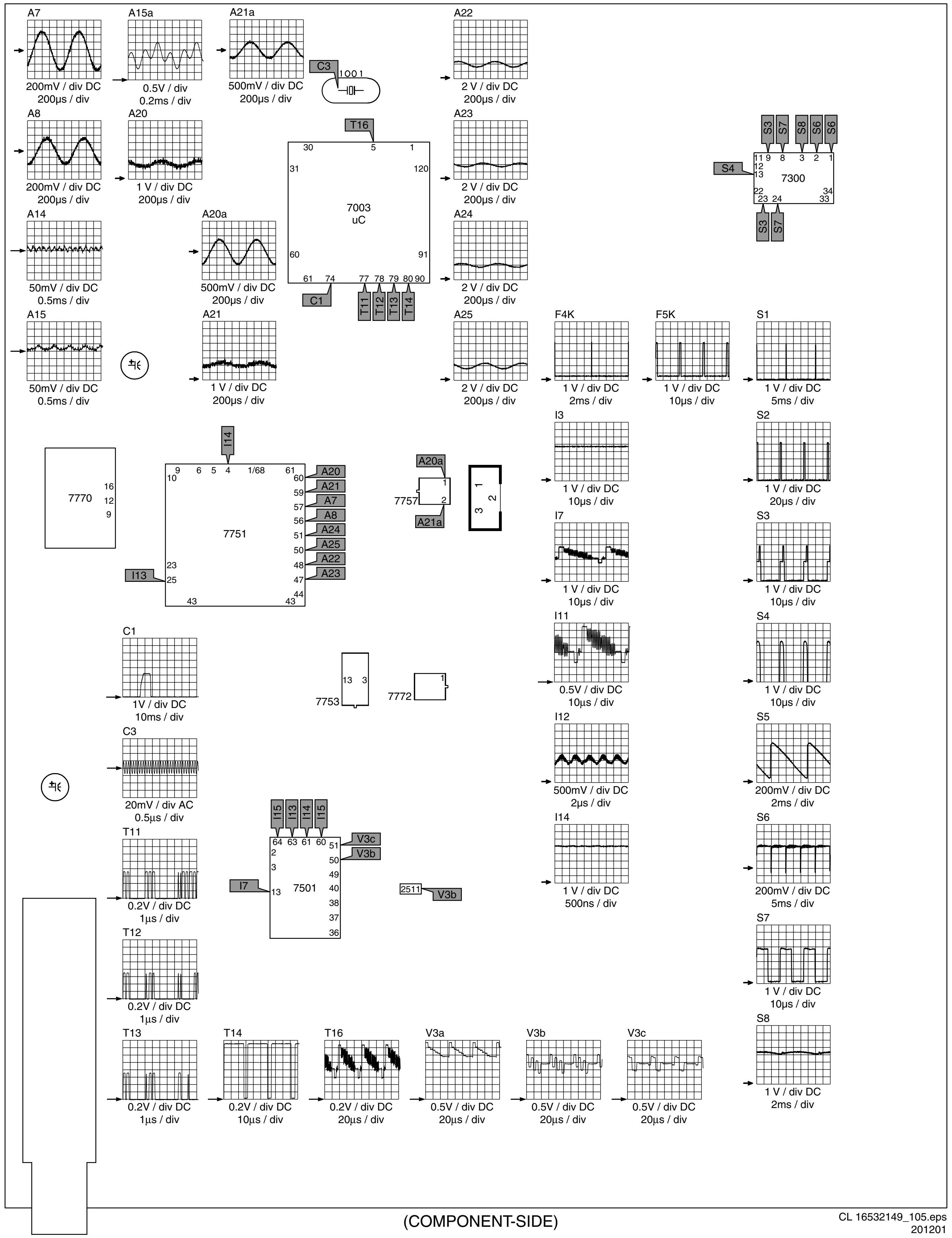

F1
1 V / div DC
5µs / div
F2
1 V / div DC
5µs / div
F3
1 V / div DC
5µs / div
F4
1 V / div DC
5µs / div
F5
1 V / div DC
5µs / div
F6
1 V / div DC
5µs / div
F7
50 V / div DC
5µs / div
F8
50 V / div DC
5µs / div
F9
50 V / div DC
5µs / div
F10
50 V / div DC
5µs / div
F11
50 V / div DC
5µs / div
F12
50 V / div DC
5µs / div
F15
10 V / div DC
10µs / div
R
F
F
B
GND
12
G
G1
4
CRT SOCKET

CL 16532149_097.eps
191201

Auto SCAVEM Panel (SC) (Copper Side)


SC1
1 V / div DC
10µs / div
SC2
1 V / div DC
10µs / div
SC3
1 V / div DC
10µs / div
SC4
2 V / div DC
10µs / div
SC5
2 V / div DC
10µs / div
SC6
2 V / div DC
10µs / div
SC7
2 V / div DC
10µs / div
SC8
2 V / div DC
10µs / div
SC9
2 V / div DC
10µs / div
SC10
1 V / div DC
10µs / div
SC11
200mV / div DC
10µs / div
SC12
1 V / div DC
10µs / div
SC13
50mV / div DC
10µs / div
SC22
2 V / div DC
10µs / div
SC23
2 V / div DC
100µs / div
SC24
2 V / div DC
100µs / div
7500
8
9
16
CL 16532149_098.eps
191201

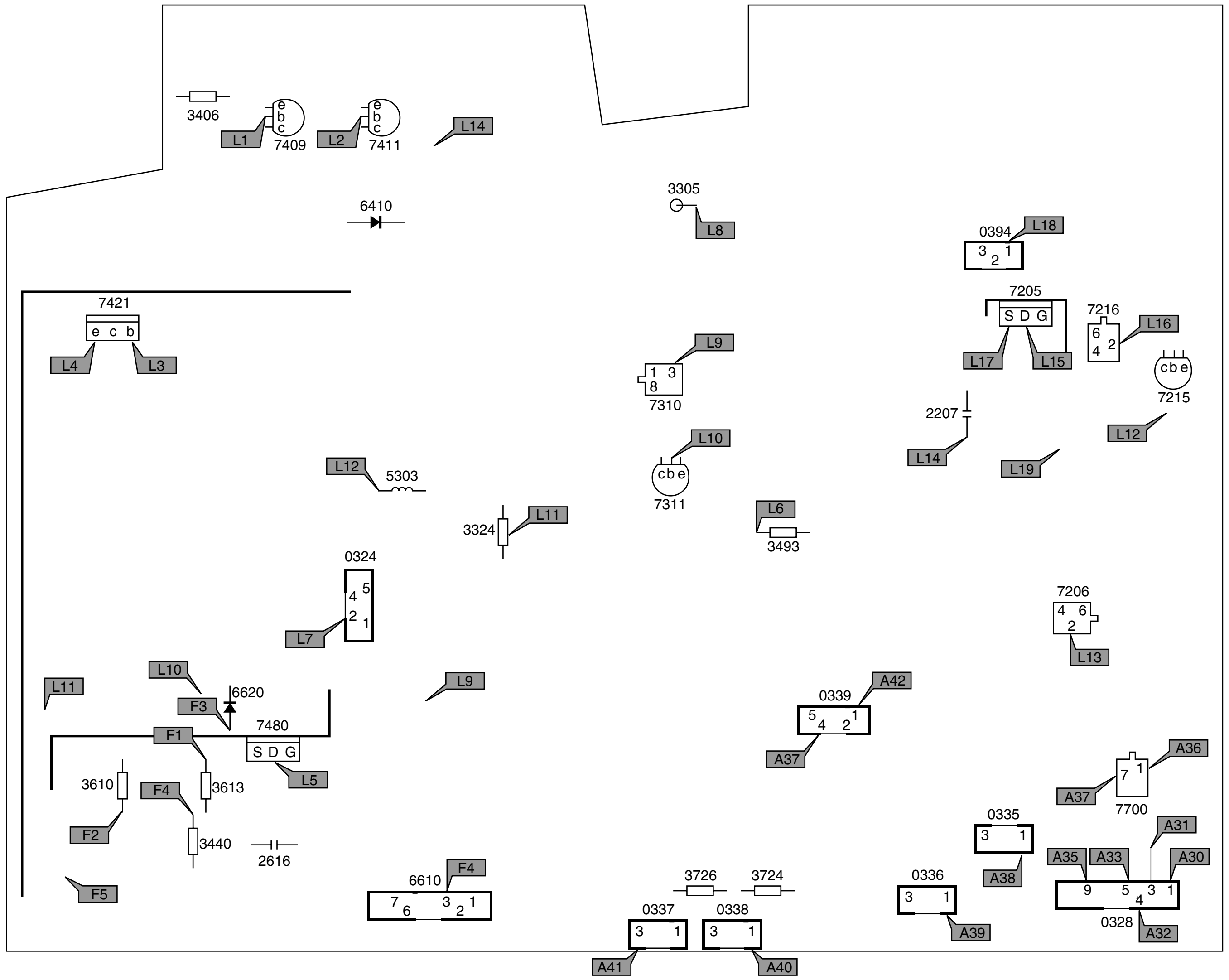
Small signal panel (K)


A7
200mV / div DC
200µs / div
A15a
0.5V / div
0.2ms / div
A21a
500mV / div DC
200µs / div
A22
2 V / div DC
200µs / div
A8
200mV / div DC
200µs / div
A20
1 V / div DC
200µs / div
A23
2 V / div DC
200µs / div
A14
50mV / div DC
0.5ms / div
A20a
500mV / div DC
200µs / div
A24
2 V / div DC
200µs / div
A15
50mV / div DC
0.5ms / div
A21
1 V / div DC
200µs / div
A25
2 V / div DC
200µs / div
F4K
1 V / div DC
2ms / div
F5K
1 V / div DC
10µs / div
S1
1 V / div DC
5ms / div
I3
1 V / div DC
10µs / div
S2
1 V / div DC
20µs / div
I7
1 V / div DC
10µs / div
S3
1 V / div DC
10µs / div
I11
0.5V / div DC
10µs / div
S4
1 V / div DC
10µs / div
C1
1V / div DC
10ms / div
C3
20mV / div AC
0.5µs / div
I12
500mV / div DC
2µs / div
S5
200mV / div DC
2ms / div
I14
1 V / div DC
500ns / div
S6
200mV / div DC
5ms / div
T11
0.2V / div DC
1µs / div
T12
0.2V / div DC
1µs / div
S7
1 V / div DC
10µs / div
S8
1 V / div DC
2ms / div
T13
0.2V / div DC
1µs / div
T14
0.2V / div DC
10µs / div
T16
0.2V / div DC
20µs / div
V3a
0.5V / div DC
20µs / div
V3b
0.5V / div DC
20µs / div
V3c
0.5V / div DC
20µs / div
1001
7003
uC
7300
7770
7751
7757
7753
7772
7501
2511

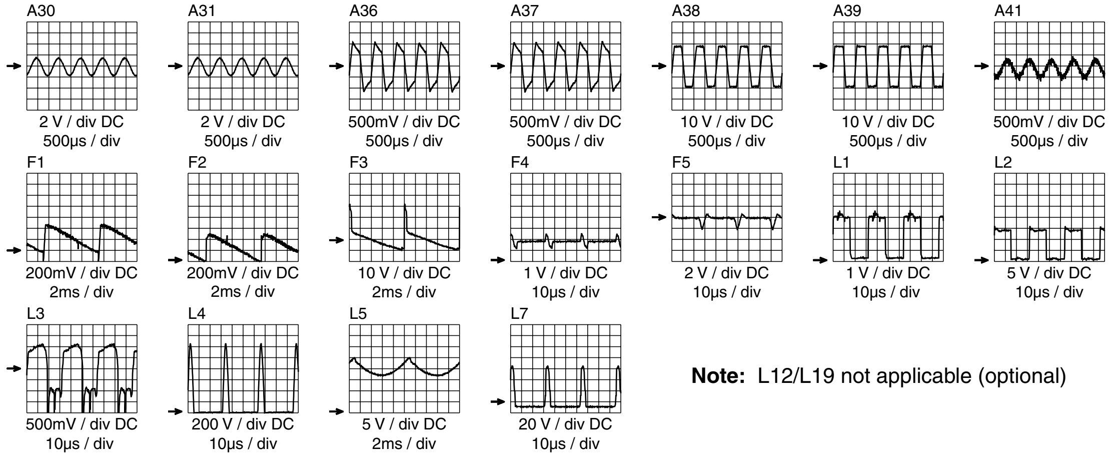
(COMPONENT-SIDE)

CL 16532149_105.eps
201201

Large Signal Panel (A)


3406
L1
7409
L2
7411
L14
6410
3305
L8
0394
L18
7421
e c b
L4
L3
7205
S D G
7216
L16
L17
L15
L9
7310
7215
2207
L14
L12
L19
L10
7311
L12
5303
L11
3324
L6
3493
0324
L7
7206
L13
L10
L11
F3
6620
L9
0339
A42
A37
7480
S D G
F1
L5
A36
7700
A37
3610
F4
3613
3440
2616
0335
A38
A31
A35
A33
A30
F5
F2
6610
F4
3726
3724
0337
0338
0336
A39
0328
A32
A41
A40

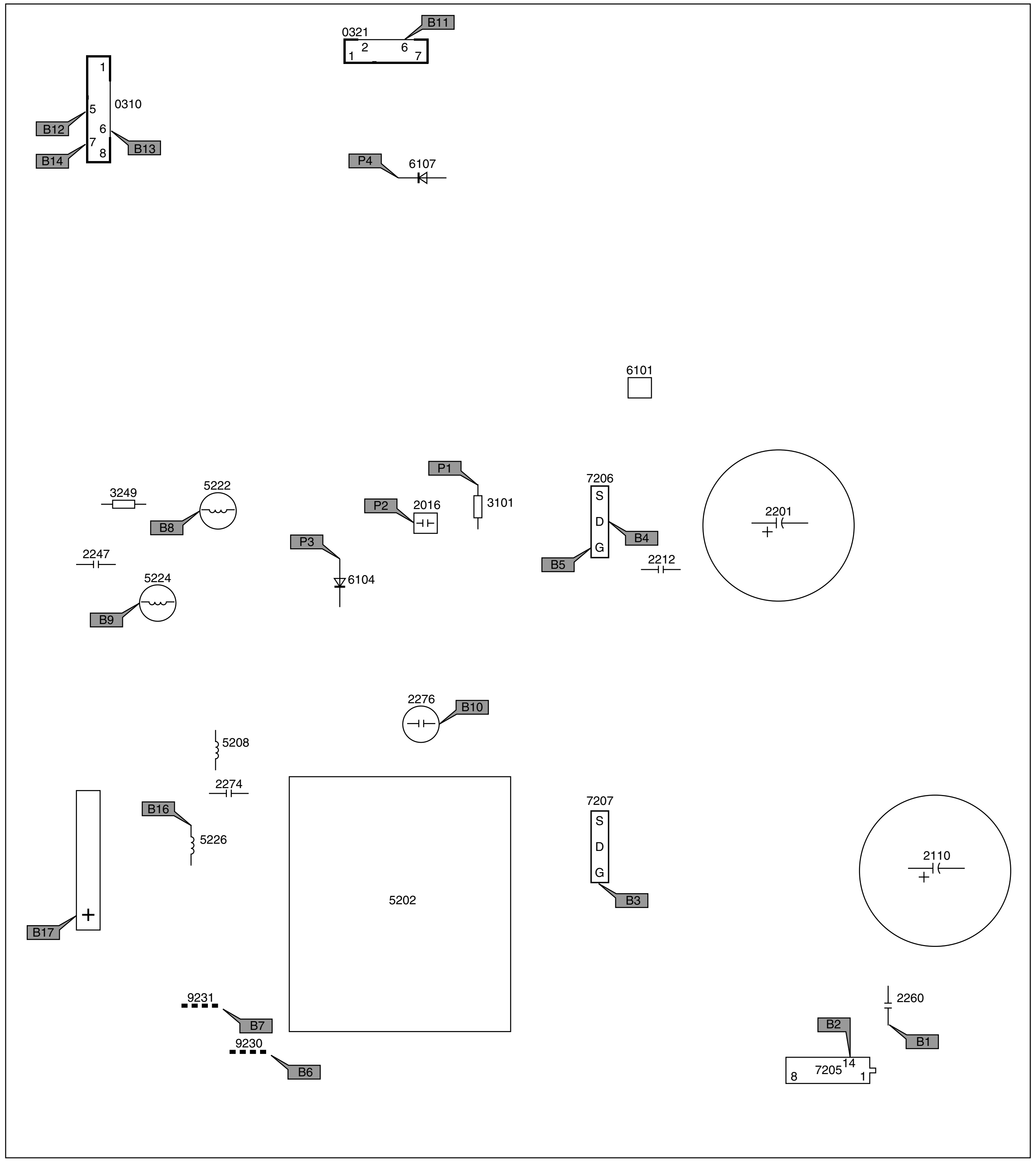
COPPERSIDE



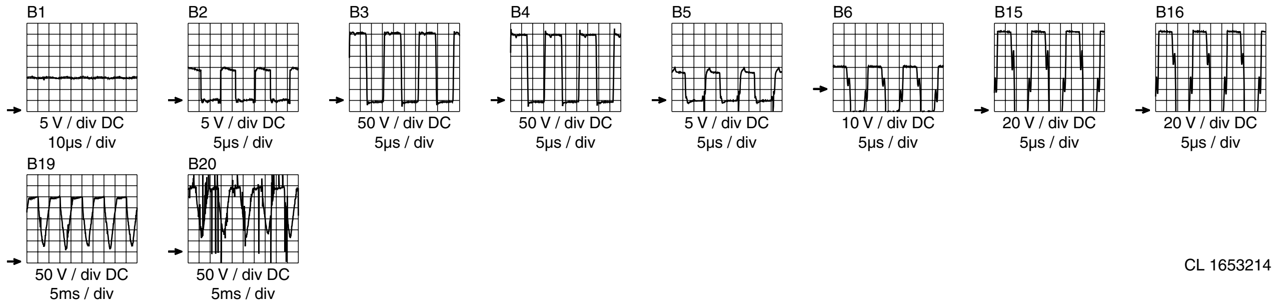
Note: L12/L19 not applicable (optional)

CL 16532149_099.eps
201201

Top Supply (B)

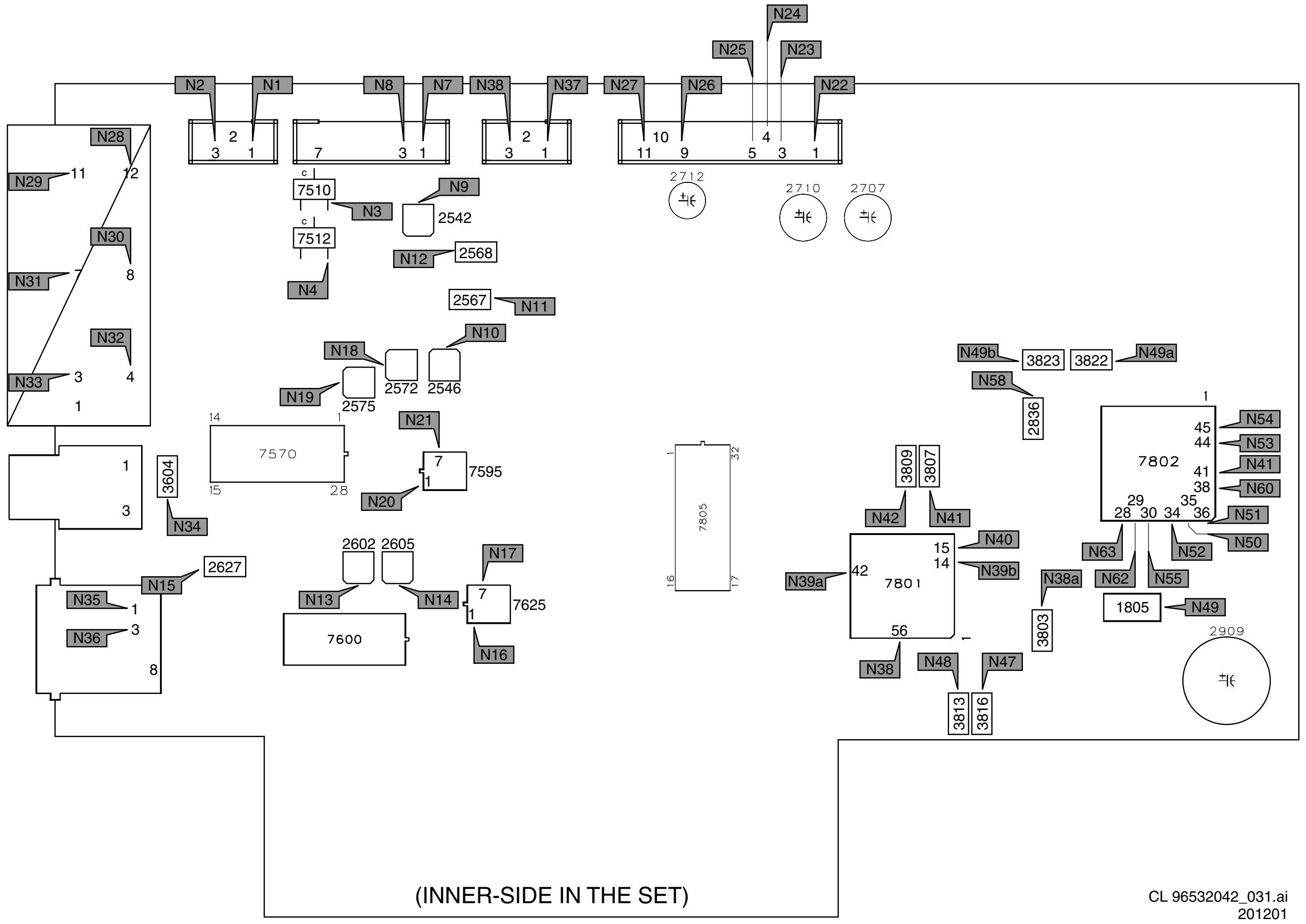

0321
B11
0310
B12
B13
B14
P4
6107
6101
P1
3101
P2
2016
3249
5222
B8
7206
S
D
G
B4
B5
2201
2247
5224
B9
P3
6104
2212
2276
B10
5208
2274
B16
5226
5202
7207
S
D
G
B3
2110
B17
9231
B7
9230
B6
2260
B2
B1
7205

COPPERSIDE



CL 16532149_106.eps
191201

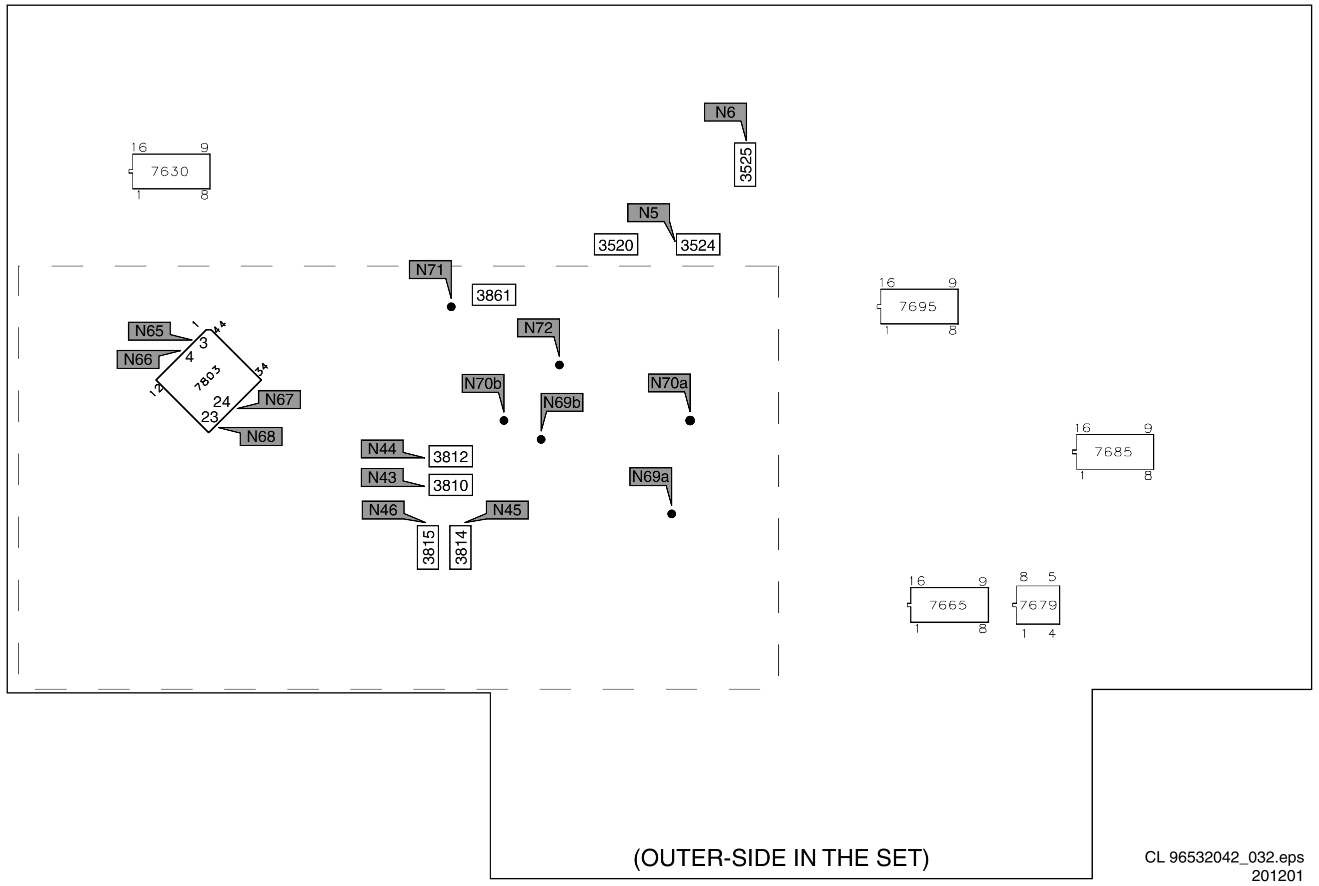
MCS Module (N)


N24
N25
N23
N2
N1
N8
N7
N38
N37
N27
N26
N22
N28
N29
N30
N31
N32
N33
N3
N4
N9
N12
N11
N10
N18
N19
N21
N20
N34
N15
N35
N36
N13
N14
N17
N16
7510
7512
2542
2568
2567
2572
2546
2575
7570
7595
3604
2627
2602
2605
7600
7625
2712
2710
2707
7805
N49b
3823
3822
N49a
N58
2836
N54
N53
N41
N60
N51
N50
7802
3809
3807
N42
N41
N40
N39b
N39a
7801
N63
N62
N55
N52
N38a
1805
N49
3803
2909
N38
N48
N47
3813
3816

(INNER-SIDE IN THE SET)

CL 96532042_031.ai
201201

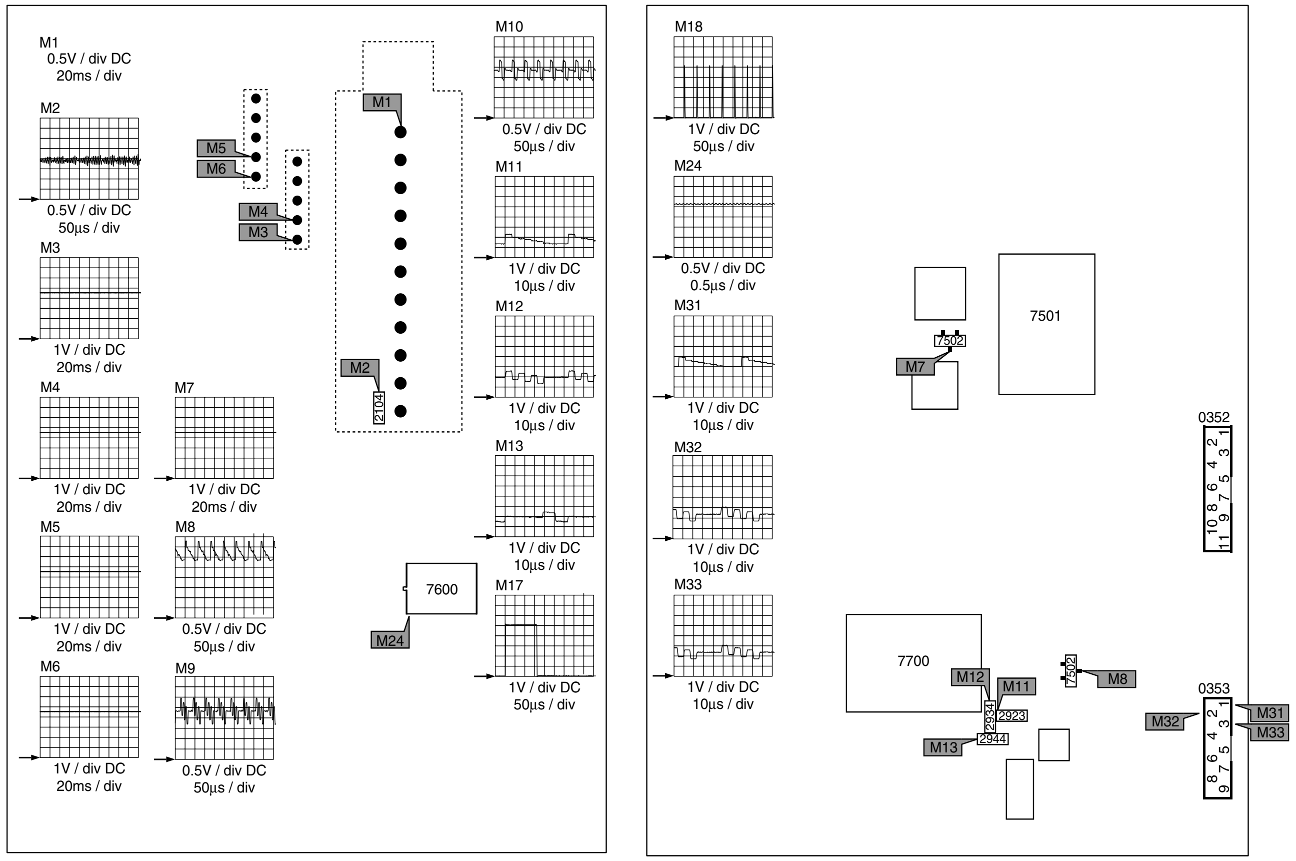
MCS Module (N)


N6
3525
N5
3520
3524
7630
N71
3861
N72
N65
N66
7803
N67
N68
N70b
N69b
N70a
N44
3812
N43
3810
N46
N45
3815
3814
N69a
7695
7685
7665
7679

(OUTER-SIDE IN THE SET)

CL 96532042_032.eps
201201

FDS Module (M)

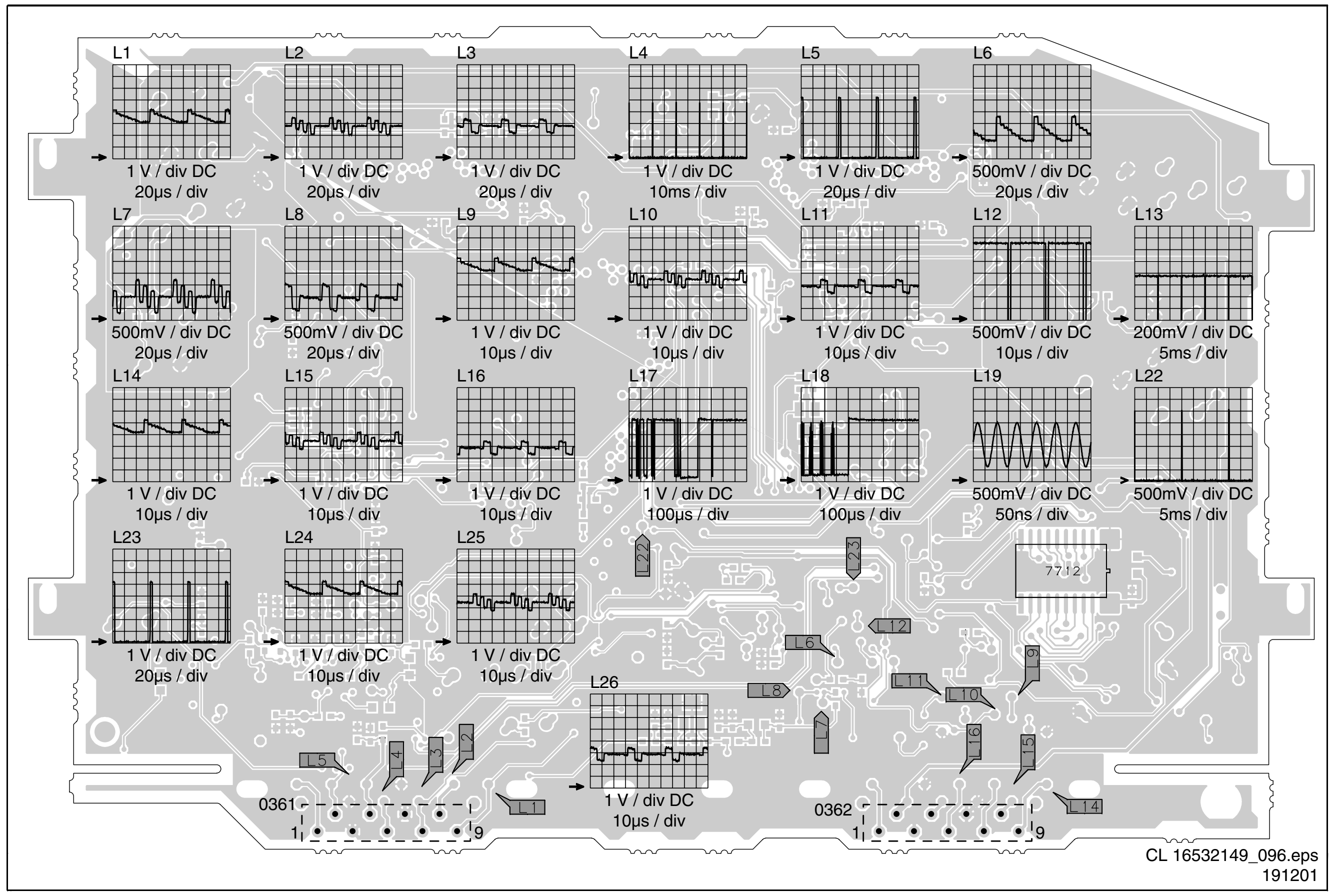

M1
0.5V / div DC
20ms / div
M2
0.5V / div DC
50µs / div
M3
1V / div DC
20ms / div
M4
1V / div DC
20ms / div
M5
1V / div DC
20ms / div
M6
1V / div DC
20ms / div
M7
1V / div DC
20ms / div
M8
0.5V / div DC
50µs / div
M9
0.5V / div DC
50µs / div
M10
0.5V / div DC
50µs / div
M11
1V / div DC
10µs / div
M12
1V / div DC
10µs / div
M13
1V / div DC
10µs / div
M17
1V / div DC
50µs / div
M18
1V / div DC
50µs / div
M24
0.5V / div DC
0.5µs / div
M31
1V / div DC
10µs / div
M32
1V / div DC
10µs / div
M33
1V / div DC
10µs / div
M5
M6
M4
M3
M1
M2
2104
7600
M24
7501
7502
M7
0352
7700
M12
M11
2923
M13
2944
7503
M8
0353
M32
M31
M33

(COPPER -SIDE)

(COMPONENT-SIDE)

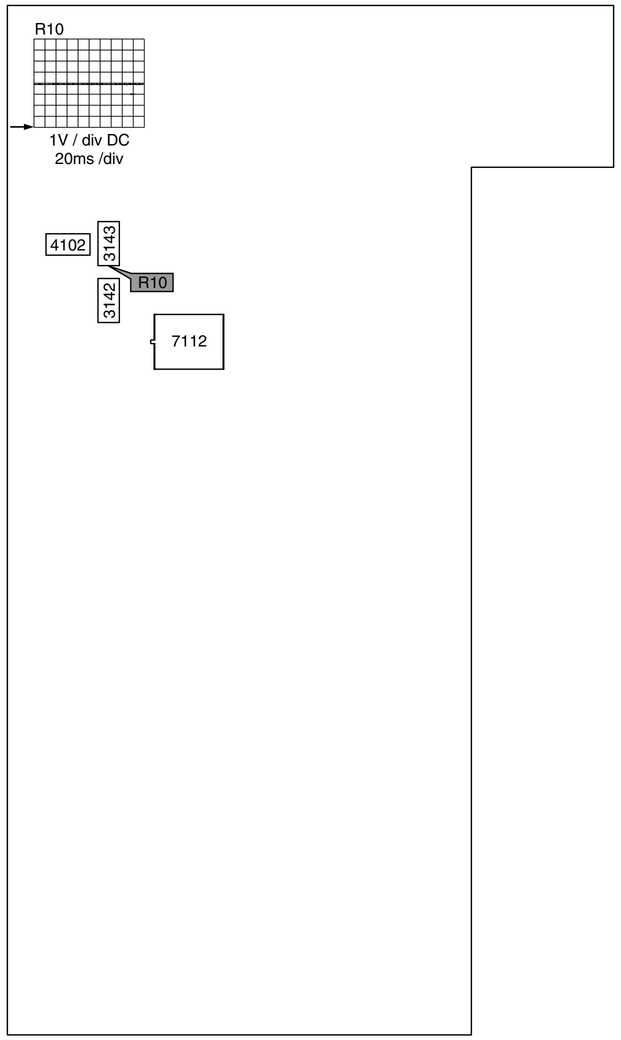
CL 96532042_59c
201201

FBX Panel (L) (Copper Side)


L1
1 V / div DC
20µs / div
L2
1 V / div DC
20µs / div
L3
1 V / div DC
20µs / div
L4
1 V / div DC
10ms / div
L5
1 V / div DC
20µs / div
L6
500mV / div DC
20µs / div
L7
500mV / div DC
20µs / div
L8
500mV / div DC
20µs / div
L9
1 V / div DC
10µs / div
L10
1 V / div DC
10µs / div
L11
1 V / div DC
10µs / div
L12
500mV / div DC
10µs / div
L13
200mV / div DC
5ms / div
L14
1 V / div DC
10µs / div
L15
1 V / div DC
10µs / div
L16
1 V / div DC
10µs / div
L17
1 V / div DC
100µs / div
L18
1 V / div DC
100µs / div
L19
500mV / div DC
50ns / div
L22
500mV / div DC
5ms / div
L23
1 V / div DC
20µs / div
L24
1 V / div DC
10µs / div
L25
1 V / div DC
10µs / div
L26
1 V / div DC
10µs / div
7712
0361
0362
1
9

CL 16532149_096.eps
191201

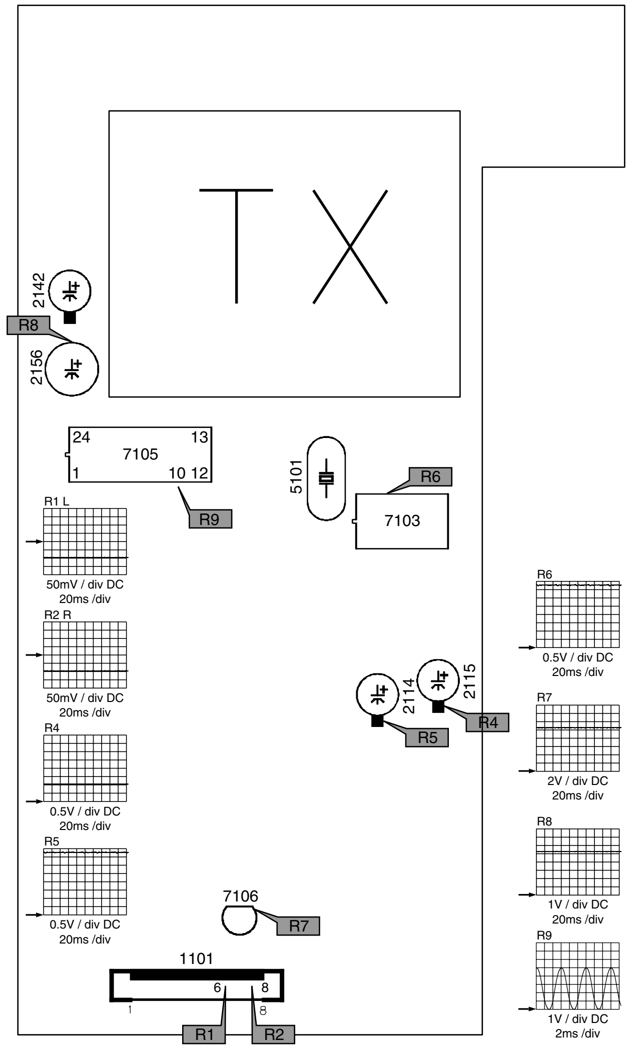
Surround Transmitter (R)


R10
1V / div DC
20ms /div
4102
3143
R10
3142
7112

(COPPER-SIDE)

CL 96532042_056.eps
201201

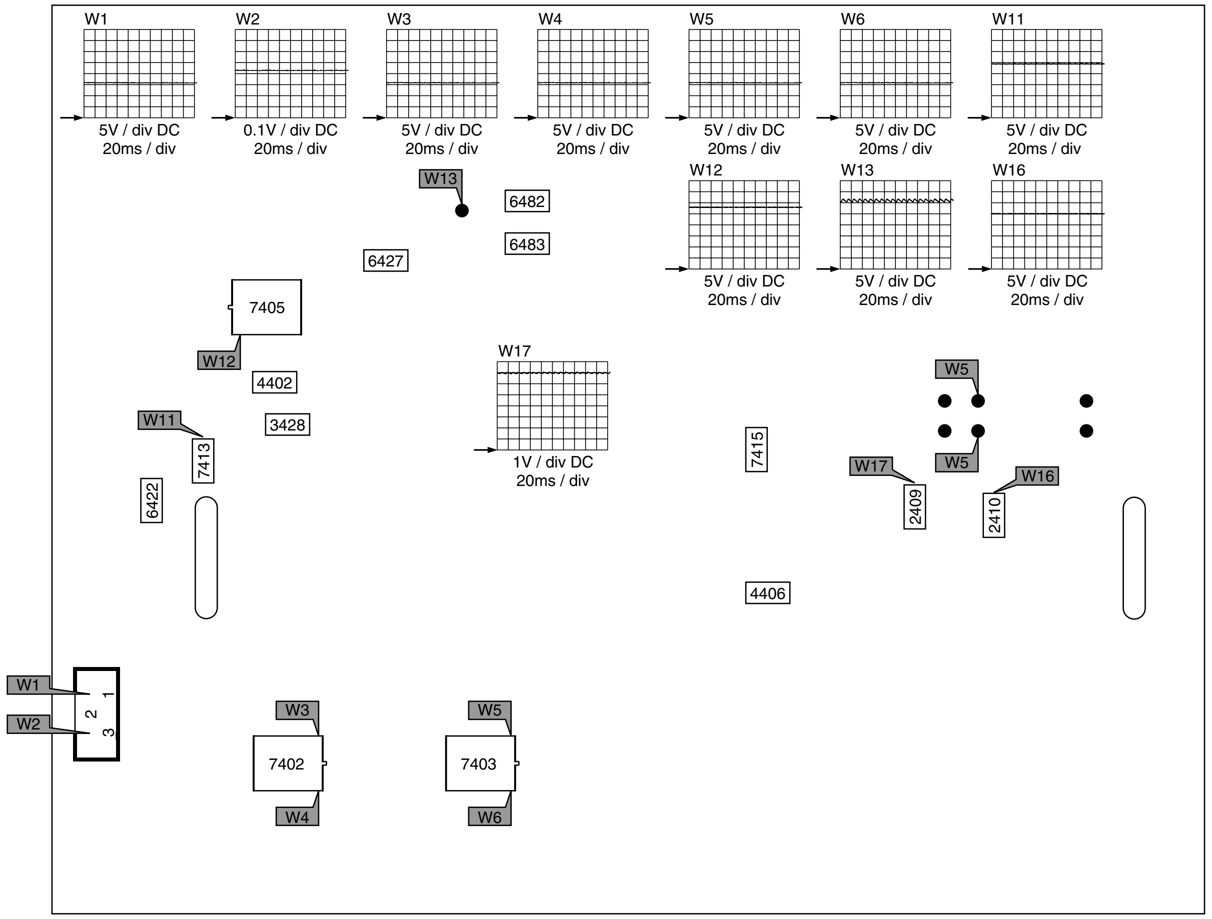
Surround Transmitter (R)


TX
2142
R8
2156
24
13
7105
1
10 12
R9
5101
R6
7103
R1 L
50mV / div DC
20ms /div
R2 R
50mV / div DC
20ms /div
R4
0.5V / div DC
20ms /div
R5
0.5V / div DC
20ms /div
R6
0.5V / div DC
20ms /div
R7
2V / div DC
20ms /div
R8
1V / div DC
20ms /div
R9
1V / div DC
2ms /div
2114
2115
R4
R5
7106
R7
1101
6
8
1
8
R1
R2

(COMPONENT-SIDE)

CL 96532042_057.eps
211201

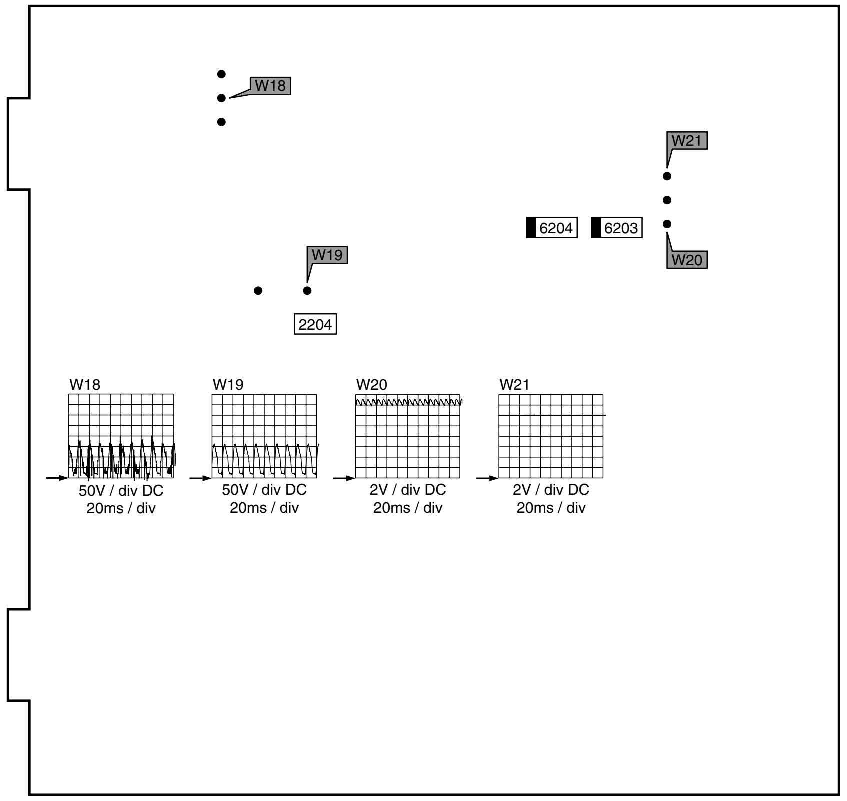
Active Surround Box Amplifier (W1)


W1
5V / div DC
20ms / div
W2
0.1V / div DC
20ms / div
W3
5V / div DC
20ms / div
W4
5V / div DC
20ms / div
W5
5V / div DC
20ms / div
W6
5V / div DC
20ms / div
W11
5V / div DC
20ms / div
W12
5V / div DC
20ms / div
W13
5V / div DC
20ms / div
W16
5V / div DC
20ms / div
W13
6482
6483
6427
7405
W12
4402
W11
3428
7413
6422
W17
1V / div DC
20ms / div
7415
W5
W5
W17
2409
2410
W16
4406
W1
W2
1
2
3
W3
7402
W4
W5
7403
W6

(COPPER -SIDE)

CL 96532042_055.ai
201201

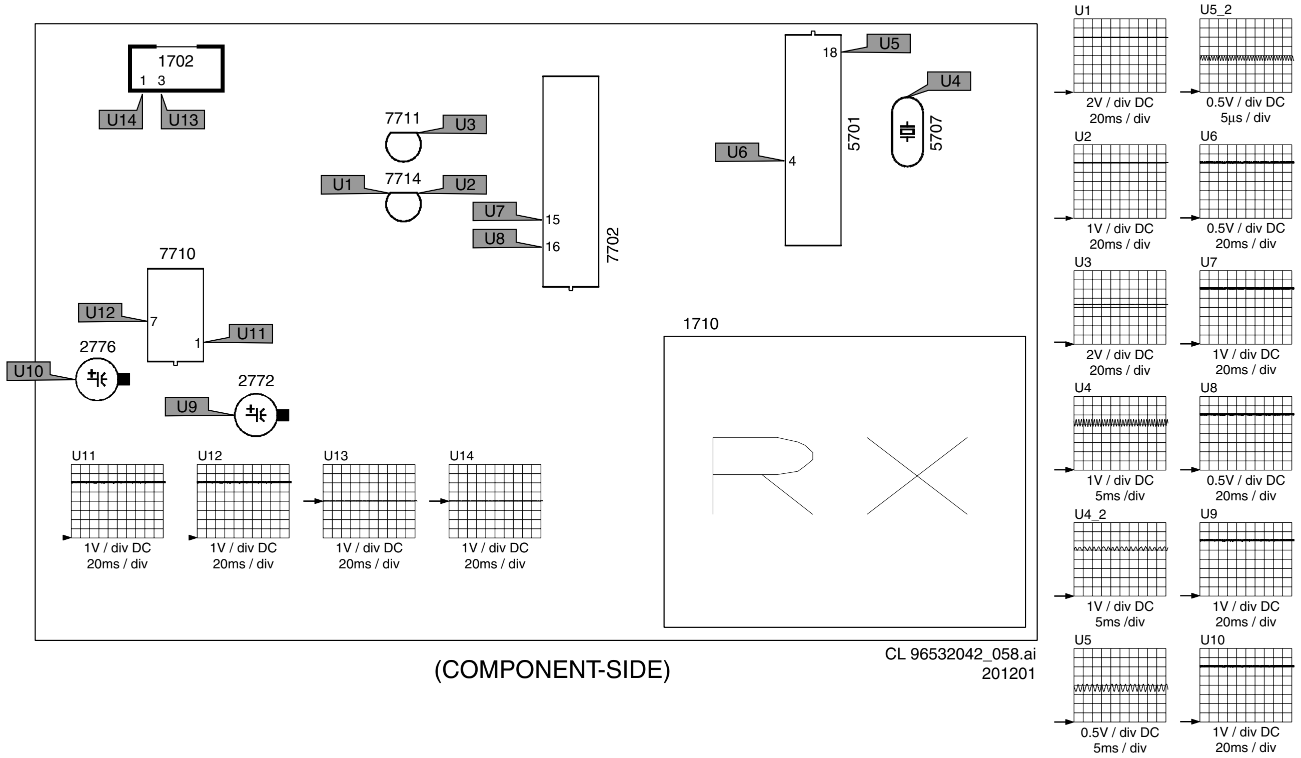
Active Surround Box Supply (W2)


W18
W21
6204
6203
W20
W19
2204
W18
50V / div DC
20ms / div
W19
50V / div DC
20ms / div
W20
2V / div DC
20ms / div
W21
2V / div DC
20ms / div

(COPPER-SIDE)

CL 96532042_054.eps
201201

Surround Receiver (U)

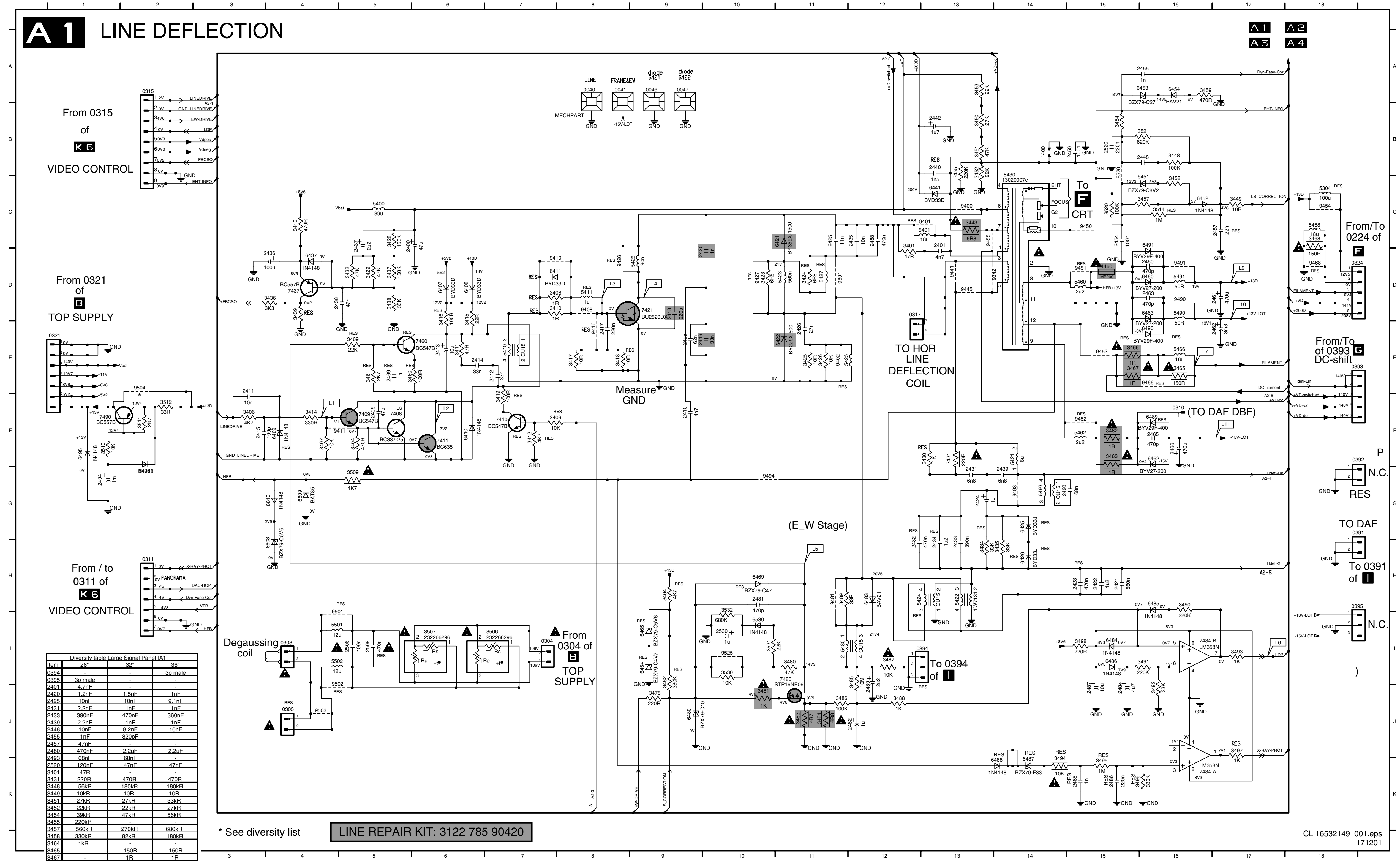

1702
1 3
U14
U13
7711
U3
U1
7714
U2
U7
15
U8
16
7702
18
U5
U4
U6
4
5701
5707
7710
U12
7
U11
1
2776
U10
2772
U9
1710
RX
U11
1V / div DC
20ms / div
U12
1V / div DC
20ms / div
U13
1V / div DC
20ms / div
U14
1V / div DC
20ms / div
U1
2V / div DC
20ms / div
U5_2
0.5V / div DC
5µs / div
U2
1V / div DC
20ms / div
U6
0.5V / div DC
20ms / div
U3
2V / div DC
20ms / div
U7
1V / div DC
20ms / div
U4
1V / div DC
5ms /div
U8
0.5V / div DC
20ms / div
U4_2
1V / div DC
5ms /div
U9
1V / div DC
20ms / div
U5
0.5V / div DC
5ms / div
U10
1V / div DC
20ms / div

(COMPONENT-SIDE)

CL 96532042_058.ai
201201

7. Circuit Diagrams and PWB Layouts

Large Signal Panel: Line Deflection

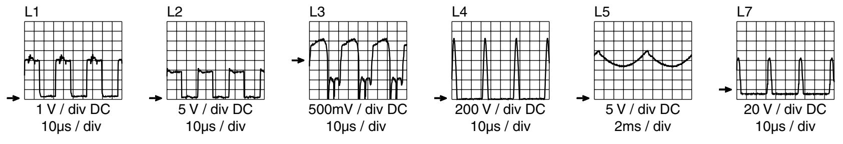

A1
LINE DEFLECTION
A1 A2
A3 A4
From 0315 of K6 VIDEO CONTROL
From 0321 of B TOP SUPPLY
From / to 0311 of K6 VIDEO CONTROL
Degaussing coil
From 0304 of B TOP SUPPLY
LINE
FRAME&EW
diode 6421
diode 6422
MECHPART
Measure GND
To F CRT
FOCUS
TO HOR LINE DEFLECTION COIL
From/To 0224 of F
From/To of 0393 G DC-shift
(TO DAF DBF)
P
N.C.
RES
TO DAF
To 0391 of I
To 0394 of I
(E_W Stage)
BU2520DX
STP16NE06
LM358N
BC557B
BC547B
BC337-25
BC635
5430 13020007c
L1
L2
L3
L4
L5
L6
L7
L9
L10
L11
PANORAMA
LINEDRIVE
HFB
EHT-INFO
Dyn-Fase-Cor
FILAMENT
X-RAY-PROT
LS_CORRECTION
CL 16532149_001.eps
171201

Diversity table Large Signal Panel [A1]			
Item	28"	32"	36"
0394	-	-	3p male
0395	3p male	-	-
2401	4.7nF	-	-
2420	1.2nF	1.5nF	1nF
2425	10nF	10nF	9.1nF
2431	2.2nF	1nF	1nF
2433	390nF	470nF	360nF
2439	2.2nF	1nF	1nF
2448	10nF	8.2nF	10nF
2455	1nF	820pF	-
2457	47nF	-	-
2480	470nF	2.2µF	2.2µF
2493	68nF	68nF	-
2520	120nF	47nF	47nF
3401	47R	-	-
3431	220R	470R	470R
3448	56kR	180kR	180kR
3449	10kR	10R	10R
3451	27kR	27kR	33kR
3452	22kR	22kR	27kR
3454	39kR	47kR	56kR
3455	220kR	-	-
3457	560kR	270kR	680kR
3458	330kR	82kR	180kR
3464	1kR	-	-
3465	-	150R	150R
3467	-	1R	1R
3482	330kR	-	-
3484	3R3	4R7	6R8
3485	7.5MR	10MR	10MR
3487	-	-	10kR
3489	-	-	33R
3520	75kR	100kR	-
3521	1MR	820kR	820kR
3531	47kR	22kR	22kR
3532	680kR	820kR	820kR
5401	18µH	-	-
5421	3128 138 56152	3128 138 57411	3128 138 56611
5430	8204 000 75001	3128 138 20931	3128 138 20931
5466	18µH	15µH	15µH
5468	18µH	10µH	10µH
5490	-	Bead	-
5493	3128 138 38881	3128 138 38881	-
6483	-	-	BAV21
9401	-	Jumper	Jumper
9481	Jumper	Jumper	-
9490	Jumper	-	Jumper
9493	-	-	Jumper

* See diversity list

LINE REPAIR KIT: 3122 785 90420

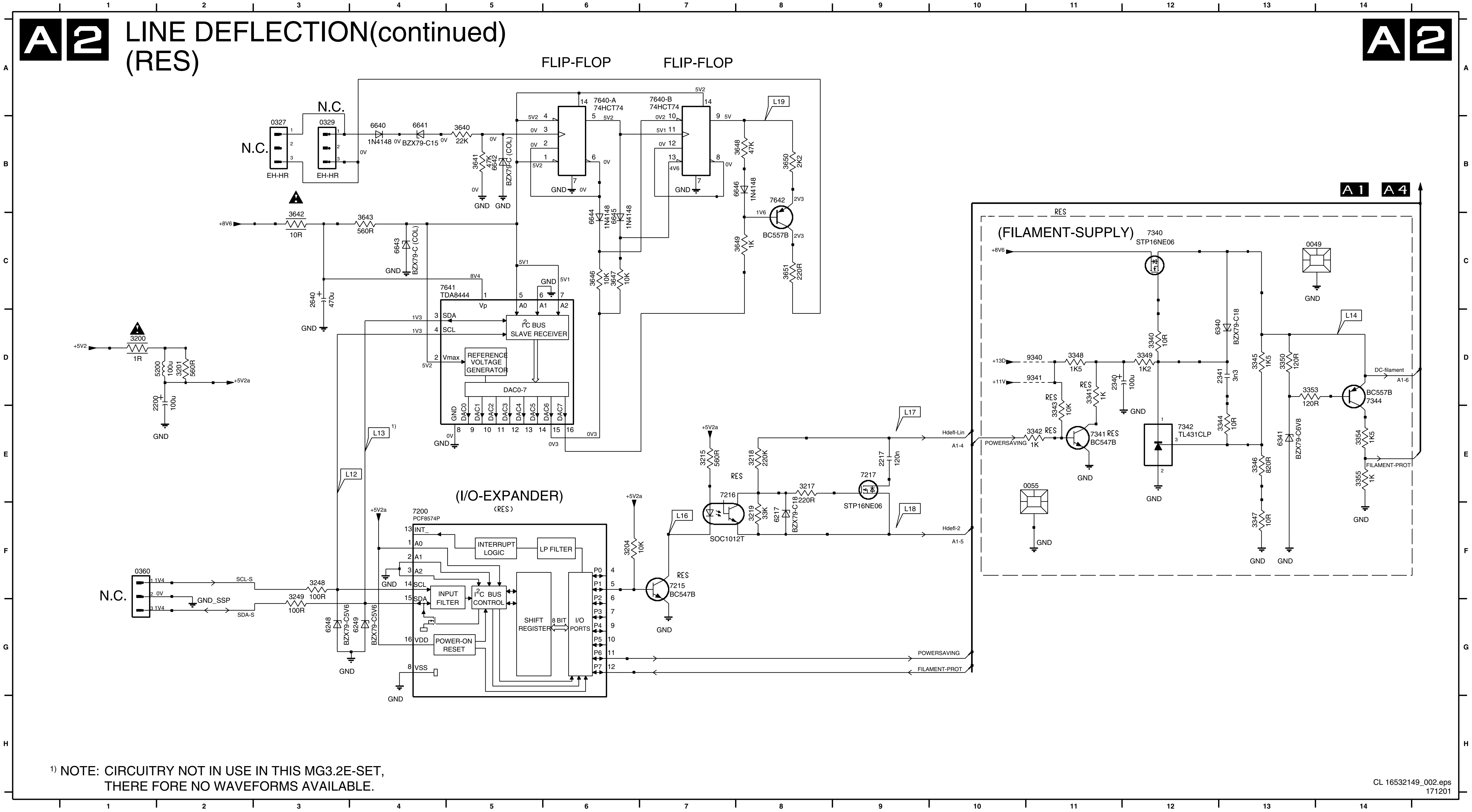
0040	A8	3443	C13	6489	F16
0041	A8	3448	B16	6490	E16
0046	A9	3449	C17	6491	C16
0047	A9	3450	B13	6495	F1
0303	I4	3451	B13	6496	G2
0304	I7	3452	B13	6530	I10
0305	J4	3453	A13	6608	H4
0310	F16	3454	B15	6609	G4
0311	H2	3455	B13	6610	G4
0315	A2	3457	C16	7408	F5
0317	D12	3458	C16	7409	F5
0321	E1	3459	A16	7410	F7
0324	D18	3460	E6	7411	F6
0391	G18	3461	E5	7421	D9
0392	F18	3462	F15	7437	D4
0393	E18	3463	F15	7460	E6
0394	I12	3464	H9	7480	I11
0395	H18	3465	E16	7484-A	K16
1400	B14	3466	E15	7484-B	I16
1460	D15	3467	E15	7490	F1
2400	C5	3468	C18	9342	D13
2401	C13	3469	E5	9400	C13
2409	F5	3478	J9	9401	C13
2410	F9	3480	I11	9402	E11
2411	E3	3481	J10	9408	D8
2412	E7	3482	I9	9410	D7
2413	E6	3483	J11	9411	F5
2414	E6	3484	J11	9416	E8
2415	F3	3485	I12	9426	D8
2417	E8	3486	J11	9427	D10
2418	D9	3487	I12	9441	D13
2419	E9	3488	J12	9445	D13
2420	D9	3489	H11	9450	C15
2421	H15	3490	H16	9451	D15
2422	H15	3491	I16	9452	F15
2423	H15	3492	J16	9453	E15
2424	G13	3493	I17	9454	C18
2425	C11	3494	K14	9455	C13
2426	E11	3495	K15	9466	E16
2431	G13	3496	K16	9468	D18
2432	H12	3497	J17	9481	H11
2433	H13	3498	I15	9490	D16
2434	H13	3506	I7	9491	D16
2435	C12	3507	I6	9493	G14
2436	D4	3509	G5	9494	G10
2437	C5	3510	F1	9501	I4
2438	D4	3511	F2	9502	J4
2439	G14	3512	F2	9503	J4
2440	B13	3514	C16	9504	E2
2442	B13	3520	C15	9520	B15
2448	B16	3521	B16	9525	I10
2450	B15	3530	I10	9801	D11
2454	C15	3531	I10		
2455	A16	3532	H10		
2457	C17	3998	K4		
2460	D16	5304	C18		
2461	D17	5400	C5		
2462	E17	5401	C13		
2463	D16	5410	E7		
2465	F16	5411	D8		
2466	F16	5421	F14		
2469	E5	5422	H13		
2480	J12	5423	D11		
2481	H10	5424	H12		
2482	J12	5425	E11		
2484	J15	5426	D9		
2485	K15	5427	D11		
2486	K15	5430	C14		
2487	J15	5460	D15		
2488	C12	5462	F15		
2493	G14	5466	E16		
2494	G1	5468	C18		
2495	E9	5480	I11		
2506	I5	5490	D16		
2509	I5	5491	D16		
2520	B15	5493	G14		
2530	I10	5501	I4		
3401	C12	5502	I4		
3404	F5	6407	D6		
3406	F3	6408	D6		
3407	F4	6409	F4		
3408	D7	6410	F6		
3409	F7	6411	D7		
3410	D7	6421	C10		
3411	E6	6422	E11		
3412	F7	6423	D10		
3413	C4	6424	E10		
3414	F4	6425	G14		
3415	D6	6426	H14		
3416	D6	6437	D4		
3417	E8	6441	C13		
3418	E8	6451	C16		
3419	F7	6452	C16		
3423	D10	6453	A16		
3424	D11	6454	A16		
3425	E11	6460	D16		
3426	E11	6462	F16		
3428	C5	6463	D16		
3429	D5	6464	I9		
3430	F13	6465	I9		
3431	F13	6469	H10		
3432	D5	6480	J9		
3434	H13	6483	H12		
3435	H14	6484	I15		
3436	D4	6485	H16		
3437	D5	6486	I15		
3438	D5	6487	K14		
3439	D4	6488	K14		



Large Signal Panel: Line Deflection (Continued)

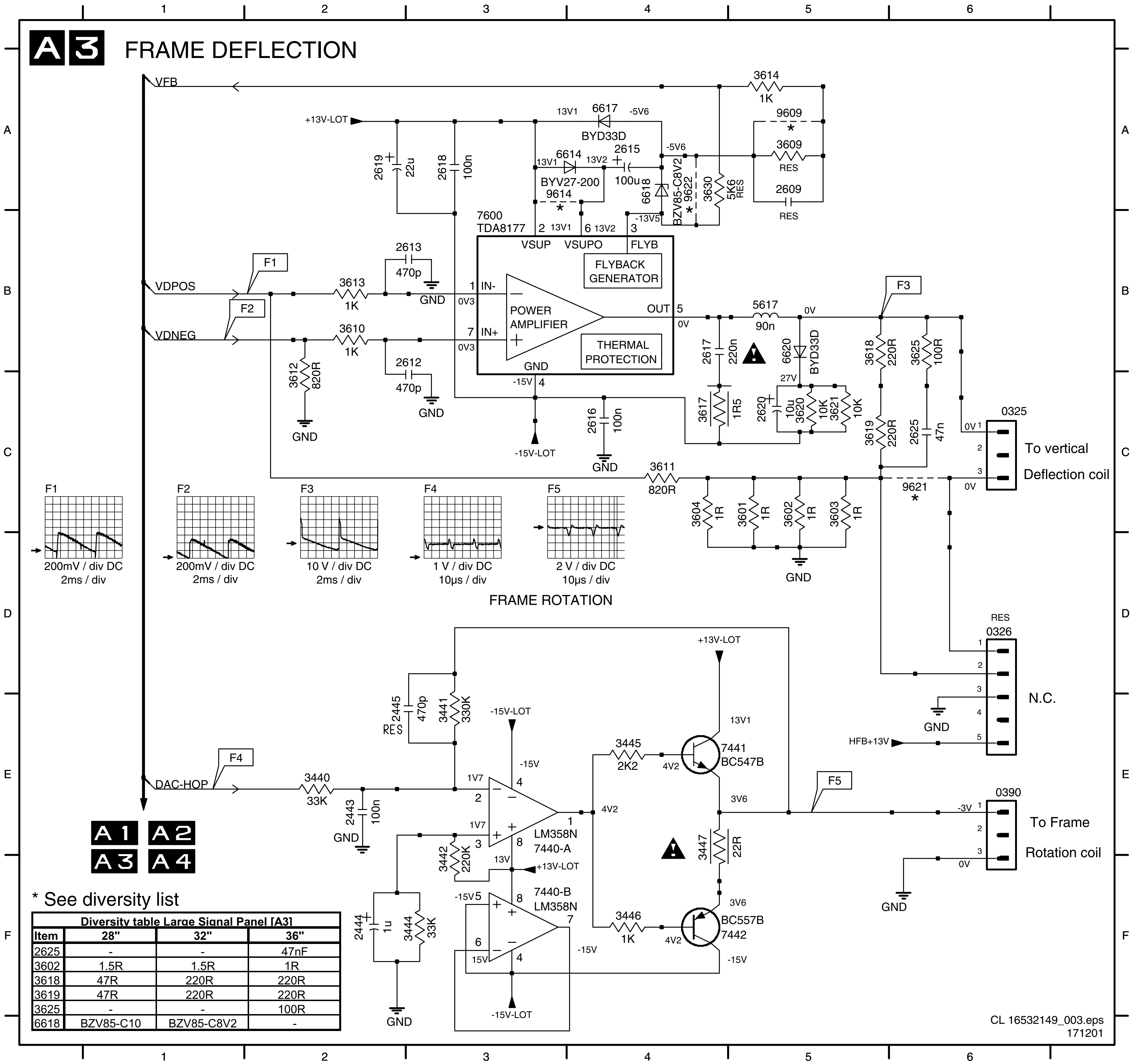
0049	C13
0055	E10
0327	B3
0329	B3
0360	F1
2200	D2
2217	E9
2340	D11
2341	D13
2640	C3
3200	D1
3201	D2
3204	F6
3215	E7
3217	E8
3218	E8
3219	F8
3248	F3
3249	G3
3340	D12
3341	D11
3342	E11
3343	E11
3344	E13
3345	D13
3346	E13
3347	F13
3348	D11
3349	D12
3350	D13
3353	D13
3354	E14
3355	E14
3640	B5
3641	B5
3642	C3
3643	C4
3646	C6
3647	C6
3648	B8
3649	C8
3650	B8
3651	C8
5200	D2
6217	F8
6248	G3
6249	G4
6340	D13
6341	E13
6640	B4
6641	B4
6642	B5
6643	C4
6644	C6
6645	C6
6646	B8
7200	F4
7215	F7
7216	E7
7217	E9
7340	C12
7341	E11
7342	E12
7344	D14
7640-A	A6
7640-B	A7
7641	C4
7642	B8
9340	D11
9341	D11

A2 LINE DEFLECTION(continued) (RES)


A2
FLIP-FLOP
FLIP-FLOP
N.C.
0327
0329
EH-HR
6640 1N4148
6641 BZX79-C15
3640 22K
3641 47K
6642 BZX79-C (COL)
7640-A 74HCT74
7640-B 74HCT74
L19
3648 47K
3650 2K2
6646 1N4148
7642 BC557B
3649 1K
3651 220R
6644 1N4148
6645 1N4148
3646 10K
3647 10K
+8V6
3642 10R
3643 560R
6643 BZX79-C (COL)
2640 470u
7641 TDA8444
I2C BUS SLAVE RECEIVER
REFERENCE VOLTAGE GENERATOR
DAC0-7
SDA
SCL
Vmax
GND
+5V2
3200 1R
5200 100u
3201 560R
2200 100u
+5V2a
L13 1)
L12
(I/O-EXPANDER)
(RES)
7200 PCF8574P
INT_
A0
A1
A2
SCL
SDA
VDD
VSS
INTERRUPT LOGIC
LP FILTER
INPUT FILTER
I2C BUS CONTROL
POWER-ON RESET
SHIFT REGISTER
8 BIT
I/O PORTS
P0
P1
P2
P3
P4
P5
P6
P7
0360
N.C.
1V4
0V
GND_SSP
SCL-S
SDA-S
3248 100R
3249 100R
6248 BZX79-C5V6
6249 BZX79-C5V6
3204 10K
RES
7215 BC547B
L16
7216
SOC1012T
3215 560R
3218 220K
3219 33K
6217 BZX79-C18
3217 220R
7217 STP16NE06
2217 120n
L17
L18
Hdefl-Lin
A1-4
Hdefl-2
A1-5
POWERSAVING
FILAMENT-PROT
A1
A4
(FILAMENT-SUPPLY)
7340 STP16NE06
0049
0055
+13D
+11V
9340
9341
3348 1K5
3349 1K2
3340 10R
3341 1K
3343 10K
3342 1K
7341 BC547B
2340 100u
7342 TL431CLP
6340 BZX79-C18
2341 3n3
3344 10R
3345 1K5
3350 120R
3346 820R
3347 10R
6341 BZX79-C6V8
L14
DC-filament
A1-6
3353 120R
BC557B 7344
3354 1K5
3355 1K
CL 16532149_002.eps
171201

[1] NOTE: CIRCUITRY NOT IN USE IN THIS MG3.2E-SET, THERE FORE NO WAVEFORMS AVAILABLE.

Large Signal Panel: Frame Deflection


A3 FRAME DEFLECTION
VFB
VDPOS
VDNEG
DAC-HOP
+13V-LOT
-15V-LOT
7600 TDA8177
VSUP
VSUPO
FLYB
FLYBACK GENERATOR
POWER AMPLIFIER
THERMAL PROTECTION
IN-
IN+
OUT
GND
3614 1K
6617 BYD33D
6614 BYV27-200
9614
2615 100u
6618
BZV85-C8V2
9622
3630 5K6 RES
9609
3609 RES
2609 RES
2619 22u
2618 100n
2613 470p
3613 1K
3610 1K
2612 470p
3612 820R
2616 100n
3611 820R
5617 90n
2617 220n
3617 1R5
6620 BYD33D
2620 10u
3620 10K
3621 10K
3618 220R
3625 100R
3619 220R
2625 47n
3604 1R
3601 1R
3602 1R
3603 1R
9621
0325
To vertical Deflection coil
0326 RES
N.C.
HFB+13V
F1 200mV / div DC 2ms / div
F2 200mV / div DC 2ms / div
F3 10 V / div DC 2ms / div
F4 1 V / div DC 10µs / div
F5 2 V / div DC 10µs / div
FRAME ROTATION
2445 470p RES
3441 330K
3440 33K
2443 100n
3442 220K
2444 1u
3444 33K
LM358N 7440-A
7440-B LM358N
3445 2K2
3446 1K
7441 BC547B
7442 BC557B
3447 22R
0390
To Frame Rotation coil
A1 A2 A3 A4
CL 16532149_003.eps
171201

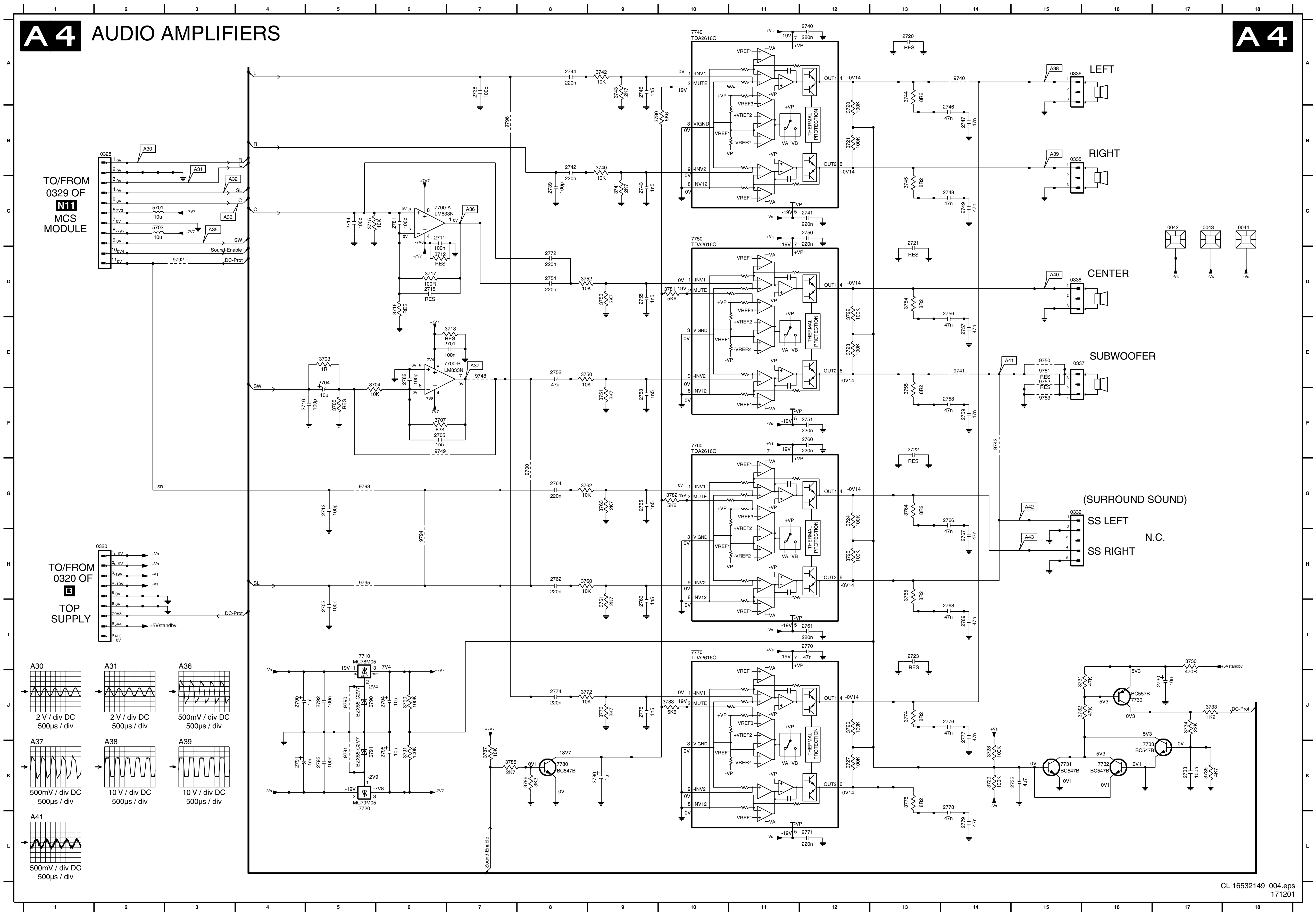
* See diversity list

Diversity table Large Signal Panel [A3]

Item	28"	32"	36"
2625	-	-	47nF
3602	1.5R	1.5R	1R
3618	47R	220R	220R
3619	47R	220R	220R
3625	-	-	100R
6618	BZV85-C10	BZV85-C8V2	-

0325	C6
0326	D6
0390	E6
2443	E2
2444	F2
2445	E2
2609	A5
2612	B3
2613	B3
2615	A4
2616	C4
2617	B4
2618	A3
2619	A2
2620	C5
2625	C6
3440	E2
3441	E3
3442	F3
3444	F3
3445	E4
3446	F4
3447	E4
3601	C5
3602	C5
3603	C5
3604	C4
3609	A5
3610	B2
3611	C4
3612	C2
3613	B2
3614	A5
3617	C4
3618	B5
3619	C5
3620	C5
3621	C5
3625	B6
3630	A4
5617	B5
6614	A4
6617	A4
6618	A4
6620	B5
7440-A	E3
7440-B	F3
7441	E4
7442	F4
7600	B3
9609	A5
9614	A3
9621	C6
9622	A4

Large Signal Panel: Audio Amplifiers


A4
AUDIO AMPLIFIERS
A4
TO/FROM
0329 OF
N11
MCS
MODULE
0328
TO/FROM
0320 OF
B
TOP
SUPPLY
0320
+5Vstandby
DC-Prot
Sound-Enable
L
R
C
SW
SL
SR
7700-A
LM833N
7700-B
LM833N
7740
TDA2616Q
7750
TDA2616Q
7760
TDA2616Q
7770
TDA2616Q
-INV1
MUTE
VIGND
-INV2
INV12
OUT1
OUT2
THERMAL PROTECTION
VREF1
VREF2
VREF3
+VP
-VP
VA
VB
7710
MC78M05
7720
MC79M05
BZX55-C2V7
7780
BC547B
7730
BC557B
7731
BC547B
7732
BC547B
7733
BC547B
LEFT
RIGHT
CENTER
SUBWOOFER
(SURROUND SOUND)
SS LEFT
N.C.
SS RIGHT
0336
0335
0338
0337
0339
0042
0043
0044
A30
2 V / div DC
500µs / div
A31
2 V / div DC
500µs / div
A36
500mV / div DC
500µs / div
A37
500mV / div DC
500µs / div
A38
10 V / div DC
500µs / div
A39
10 V / div DC
500µs / div
A41
500mV / div DC
500µs / div
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
A
B
C
D
E
F
G
H
I
J
K
L

CL 16532149_004.eps
171201

0042	C17	2768	I14	3755	F13
0043	C17	2769	I14	3760	H8
0044	C18	2770	I12	3761	I9
0320	H2	2771	L12	3762	G8
0328	B2	2772	D8	3763	G9
0335	B15	2774	J8	3764	G13
0336	A15	2775	J9	3765	H13
0337	E15	2776	J14	3772	J8
0338	D15	2777	J14	3773	J9
0339	G15	2778	K14	3774	J13
2701	E7	2779	L14	3775	K13
2702	I5	2780	K9	3780	B10
2704	E5	2781	C6	3781	D10
2705	F6	2782	E6	3782	G10
2711	C6	2790	J4	3783	J10
2712	G5	2791	K4	3785	K7
2714	C5	2792	J5	3786	K8
2715	D6	2793	K5	3787	K7
2716	F4	2794	J6	3790	J6
2720	A13	2795	K6	3791	K6
2721	C13	3703	E5	5701	C2
2722	F13	3704	E5	5702	C2
2723	I13	3705	F5	6790	J5
2730	J17	3707	F6	6791	K5
2732	K15	3712	D6	7700-A	C6
2733	K17	3713	E7	7700-B	E6
2738	A7	3715	C5	7710	I5
2739	C8	3716	D6	7720	K5
2740	A12	3717	D6	7730	J16
2741	C12	3720	B12	7731	K15
2742	B8	3721	B12	7732	K16
2743	C9	3722	D12	7733	K17
2744	A8	3723	E12	7740	A10
2745	A9	3724	G12	7750	C10
2746	B14	3725	H12	7760	F10
2747	B14	3726	J12	7770	I10
2748	C14	3727	K12	7780	K8
2749	C14	3728	K14	9700	G8
2750	C12	3729	K14	9740	A14
2751	F12	3730	I17	9741	E14
2752	E8	3731	J16	9742	F14
2753	F9	3732	J16	9748	E7
2754	D8	3733	J17	9749	F6
2755	D9	3734	J17	9750	E15
2756	D14	3735	K17	9751	E15
2757	E14	3740	B9	9752	E15
2758	F14	3741	C9	9753	F15
2759	F14	3742	A9	9790	J5
2760	F12	3743	A9	9791	K5
2761	I12	3744	A13	9792	D3
2762	H8	3745	C13	9793	G5
2763	I9	3750	E8	9794	H6
2764	G8	3751	F9	9795	H5
2765	G9	3752	D8	9796	B7
2766	G14	3753	D9		
2767	H14	3754	D13		

Large Signal Panel [A4]
(for readability)

Item	Corded	Cordless
0328	4822 267 10981	4822 267 10962
0339	4822 267 10971	-
2702	4,7nF	-
2705	150pF	100nF
2712	4,7nF	-
2742	47nF	220nF
2743	680pF	1,5nF
2744	47nF	-
2752	1 F	-
2753	1,5nF	330nF
2754	150nF	220nF
2755	1,5nF	680pF
2761	220nF	220nF
2762	1 F	1 F
2763	1,5nF	1,5nF
2764	1 F	-
2765	1,5nF	1,5nF
2766	47nF	47nF
2767	47nF	47nF
2768	47nF	47nF
2769	47nF	47nF
2770	-	47nF
2771	-	220nF
2774	-	220nF
2775	-	1,5nF
2776	-	47nF
2777	-	47nF
2778	-	47nF
2779	-	47nF
3700	1k	-
3701	330E	-
3707	15k	-
3707	-	8k2
3710	1k	-
3711	330E	-
3715	15k	10k
3716	1k	-
3717	1k8	100R
3720	100k	-
3723	100k	-
3724	47k	100k
3725	47k	-
3726	-	100k
3741	33k	820R
3742	470R	-
3743	33k	-
3750	3k9	-
3751	56k	-
3752	470R	3k3
3753	6k8	1k8
3760	-	22k
3760	470R	-
3761	6k8	3k9
3762	470R	-
3763	6k8	-
3764	8R2	8R2
3765	8R2	8R2
3772	-	470R
3773	-	820R
3774	-	8R2
3775	-	8R2
3782	5k6	5k6
3783	-	5k6
7760	TDA2616Q/N1	TDA2616Q/N1
7770	-	TDA2616Q/N1
9700	-	Jumper
9707	-	Jumper
9710	Jumper	-
9716	Jumper	Jumper
9720	Jumper	Jumper
9724	Jumper	Jumper
9740	Jumper	-

Layout Large Signal Panel (Top View)

0040	E9
0041	F7
0042	G5
0043	F4
0044	E4
0046	B6
0047	C7
0049	B6
0055	C2
0303	A1
0304	A2
0305	A1
0310	E9
0311	G7
0315	G6
0317	B7
0320	E2
0321	A6
0324	E7
0325	E6
0326	E7
0327	E2
0328	G1
0329	D3
0335	G3
0336	G2
0337	G5
0338	G4
0339	F4
0360	E1
0390	G9
0391	F9
0392	B9
0393	E6
0394	C3
0395	F9
1460	F8
2200	D1
2217	C3
2340	A7
2341	A7
2400	D6
2401	C7
2409	A7
2410	C9
2411	A8
2412	B7
2413	A8
2414	B7
2415	B8
2417	B9
2418	C9
2419	C8
2420	C7
2421	A4
2422	A4
2423	A4
2424	B2
2425	C6
2426	D6
2431	C4
2432	B3
2433	B4
2434	B4
2435	B6
2436	D3
2437	C4
2438	D4
2439	C4
2440	E6
2442	F5
2443	G8
2444	G8
2445	G8
2448	D9
2450	E9
2454	D9
2455	G7
2457	C9
2460	F7
2461	F7
2462	E8
2463	F8
2465	F9
2466	F9
2469	A8
2480	C3
2481	G7
2482	G7
2484	D4
2485	D4
2486	D3
2487	D4
2488	C6
2493	A3
2494	B5
2495	C7
2506	A2
2509	B2
2520	C9
2530	F7
2609	F9
2612	F9
2613	F8
2615	G9
2616	G8
2617	G9
2618	F9
2619	F9
2620	F8
2625	E6
2640	D2
2701	F2
2702	G1
2704	G2
2705	F2
2711	G1
2712	G1
2714	G1
2715	F1
2716	G2
2720	G3
2721	G5
2722	F5
2723	E3
2730	E2
2732	E2
2733	E2
2738	G1
2739	G1
2740	G4
2741	G4
2742	G3
2743	G4
2744	G3
2745	G3
2746	F3
2747	F3
2748	F3
2749	F3
2750	G6
2751	G6
2752	F3
2753	G6
2754	F3
2755	G5
2756	G4
2757	G5
2758	G4
2759	F5
2760	F5
2761	F5
2762	F6
2763	F5
2764	F4
2765	F5
2766	F5
2767	E5
2768	F4
2769	F5
2770	E5
2771	E4
2772	F2
2774	F4
2775	E4
2776	E3
2777	E3
2778	F3
2779	E3
2780	F2
2781	F1
2782	F2
2790	E1
2791	F1
2792	E1
2793	F1
2794	E2
2795	F2
3200	B1
3201	B1
3204	C1
3215	C1
3217	C2
3218	C2
3219	C2
3248	C1
3249	C1
3340	A6
3341	A7
3342	B6
3343	A7
3344	A7
3345	A7
3346	A7
3347	B7
3348	A7
3349	A7
3350	A6
3353	B7
3354	B7
3355	A7
3401	C7
3404	A8
3406	A8
3407	A8
3408	A8
3409	B6
3410	B8
3411	B7
3412	B6
3413	D4
3414	A8
3415	A8
3416	A8
3417	B9
3418	B9
3419	B7
3423	C6
3424	C6
3425	D6
3426	D6
3428	C4
3429	C3
3430	C4
3431	C4
3432	C4
3434	B3
3435	B3
3436	D3
3437	C4
3438	D4
3439	C3
3440	G8
3441	G9
3442	G9
3443	E7
3444	G8
3445	G9
3446	G9
3447	G9
3448	D9
3449	E9
3450	B9
3451	B9
3452	B9
3453	B9
3454	C9
3455	B9
3457	C9
3458	C9
3459	C9
3460	A8
3461	A8
3462	E9
3463	F9
3464	F6
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3466	F7
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3468	E8
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3481	F7
3482	G7
3483	G8
3484	G8
3485	G7
3486	G7
3487	B3
3488	F7
3489	C3
3490	D3
3491	D3
3492	D3
3493	D4
3494	D4
3495	D3
3496	D3
3497	E4
3498	E4
3506	A2
3507	B2
3509	G8
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3511	A6
3512	A6
3514	C9
3520	C9
3521	C9
3530	G7
3531	F7
3532	F7
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3603	F8
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3609	F9
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3611	G8
3612	G8
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3619	E6
3620	F8
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3642	C2
3643	C2
3646	D2
3647	D2
3648	D2
3649	D3
3650	D2
3651	D3
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3704	F2
3705	G2
3707	F2
3712	F1
3713	F2
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3716	G1
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3723	G4
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3743	G3
3744	F3
3745	F3
3750	F6
3751	G6
3752	G6
3753	G6
3754	G4
3755	G4
3760	F5
3761	F5
3762	F4
3763	F4
3764	F5
3765	F4
3772	E4
3773	E4
3774	E3
3775	E3
3780	F3
3781	G5
3782	F3
3783	E3
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3786	F2
3787	G1
3790	F2
3791	F2
3998	C1
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5304	E7
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5401	B7
5410	B8
5411	B8
5421	D4
5422	B4
5423	C6
5424	B4
5425	D6
5426	C7
5427	C6
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5460	E7
5462	E8
5466	E8
5468	F8
5480	C3
5490	F8
5491	F7
5493	A3
5501	A2
5502	B1
5617	G8
5701	G1
5702	G1
6217	C2
6248	C1
6249	C1
6340	A6
6341	A7
6407	A8
6408	A8
6409	A9
6410	B7
6411	B8
6421	C6
6422	C7
6423	C6
6424	D7
6425	B3
6426	B3
6437	C3
6441	F6
6451	C9
6452	C9
6453	C9
6454	C9
6460	F7
6462	F9
6463	F8
6464	F6
6465	F6
6469	G7
6480	G7
6483	C3
6484	D3
6485	D3
6486	D4
6487	D4
6488	E5
6489	F9
6490	F8
6491	F7
6495	A6
6496	B5
6530	F7
6608	G8
6609	G7
6610	G7
6614	F9
6617	G9
6618	G9
6620	F8
6640	E2
6641	D2
6642	D2
6643	D1
6644	E1
6645	E2
6646	D2
6790	F2
6791	F2
7200	C1
7215	C1
7216	C1
7217	C2
7340	B7
7341	A7
7342	A7
7344	B7
7408	A7
7409	A8
7410	B7
7411	A7
7421	C9
7437	C3
7440	G9
7441	G9
7442	G9
7460	A8
7480	G8
7484	D3
7490	A6
7600	G9
7640	D1
7641	C2
7642	D2
7700	F1
7710	F1
7720	F1
7730	E2
7731	E3
7732	E3
7733	E2
7740	G4
7750	G5
7760	F5
7770	E4
7780	E2
9302	B8
9304	A6
9305	B6
9307	A7
9340	A7
9341	A7
9342	D7
9400	E6
9401	B7
9402	C6
9403	C3
9405	G7
9406	E5
9407	G8
9408	B8
9409	E5
9410	A8
9411	A8
9412	E9
9413	G6
9414	D7
9415	E5
9416	B9
9417	E5
9418	E5
9420	D5
9421	E5
9422	E7
9423	E7
9424	E6
9425	E7
9426	C7
9427	C6
9428	F8
9430	E5
9431	D4
9432	F9
9433	F6
9441	E7
9445	E7
9450	E9
9451	E7
9452	F9
9453	D9
9454	E7
9455	E6
9460	F7
9466	E7
9468	F9
9481	C3
9483	B6
9484	B5
9487	G7
9488	A7
9489	B6
9490	F8
9491	F7
9492	A4
9493	B3
9494	D9
9495	D5
9497	E5
9498	G7
9499	E5
9501	A2
9502	B2
9503	B1
9504	A6
9520	C9
9525	G7
9609	F9
9614	F9
9621	F6
9622	G9
9640	C2
9641	C1
9642	C1
9643	D1
9700	F5
9702	E1
9708	F2
9712	E2
9713	G6
9714	G3
9716	F5
9719	G6
9720	F5
9721	E5
9722	F2
9725	F1
9740	G3
9741	G5
9742	F4
9748	F2
9749	F2
9750	G5
9751	G5
9752	G5
9753	G4
9790	E2
9791	E2
9792	G2
9793	F3
9794	F5
9795	F5
9796	F3
9797	G9
9798	G3
9801	C6
9802	B6
9803	B6
9804	F2
9805	E2
9807	C5
9808	B2
9814	C9
9817	F2
9819	B2
9820	A2
9823	C8
9824	G1
9825	G1
9827	E1
9829	F2
9830	E2
9831	G2
9832	G2
9833	G1
9834	G3
9835	F2
9836	F3
9837	F3
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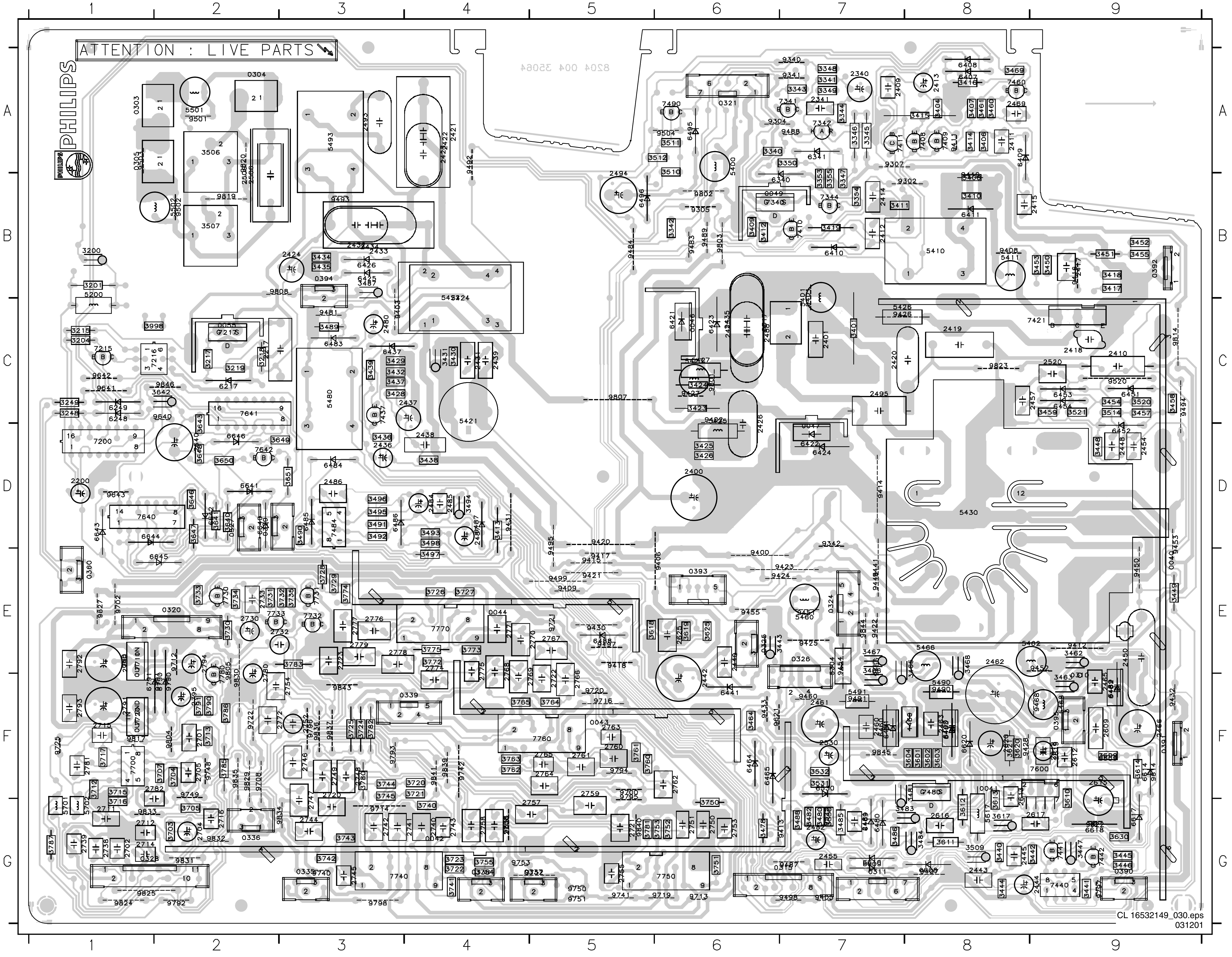
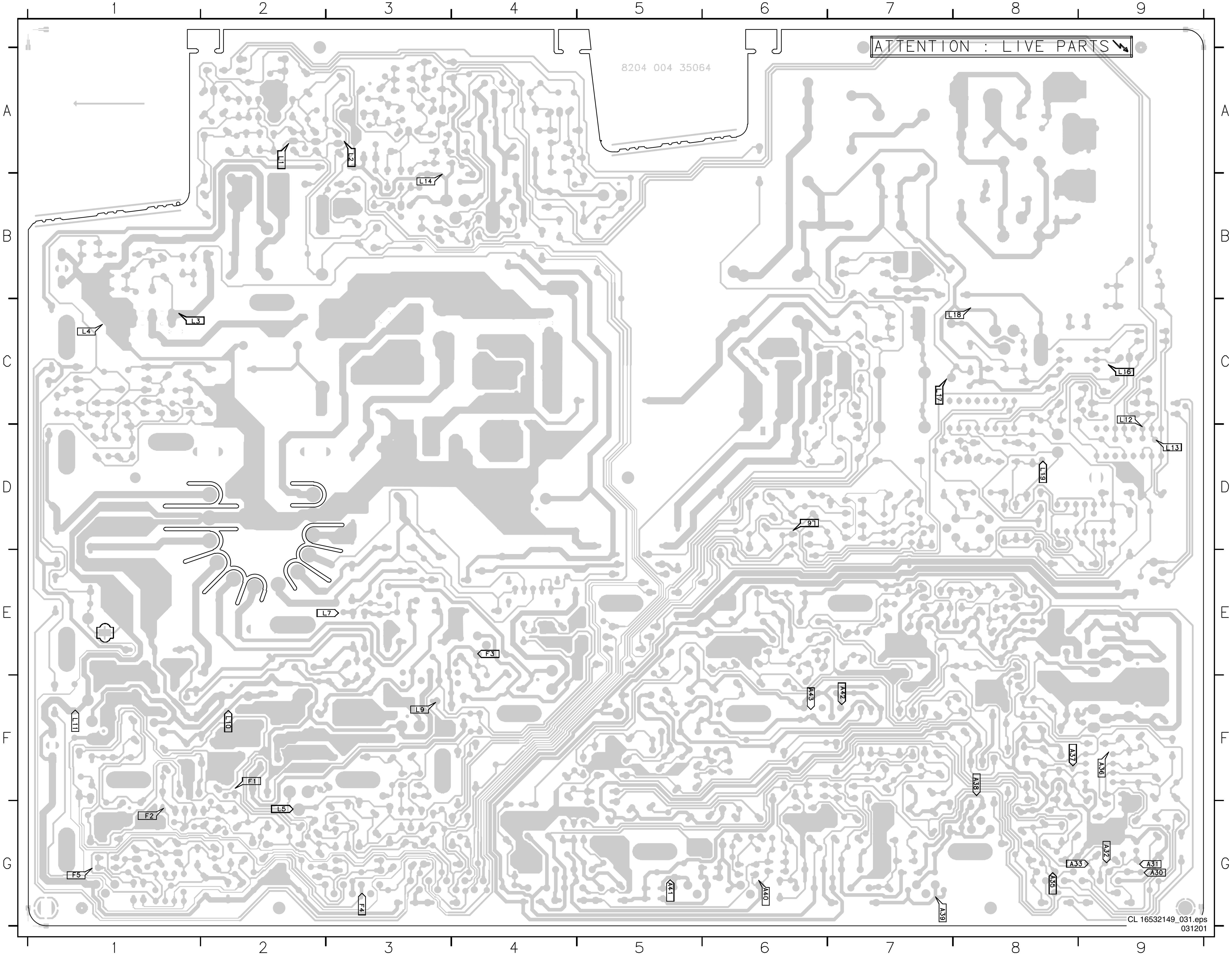
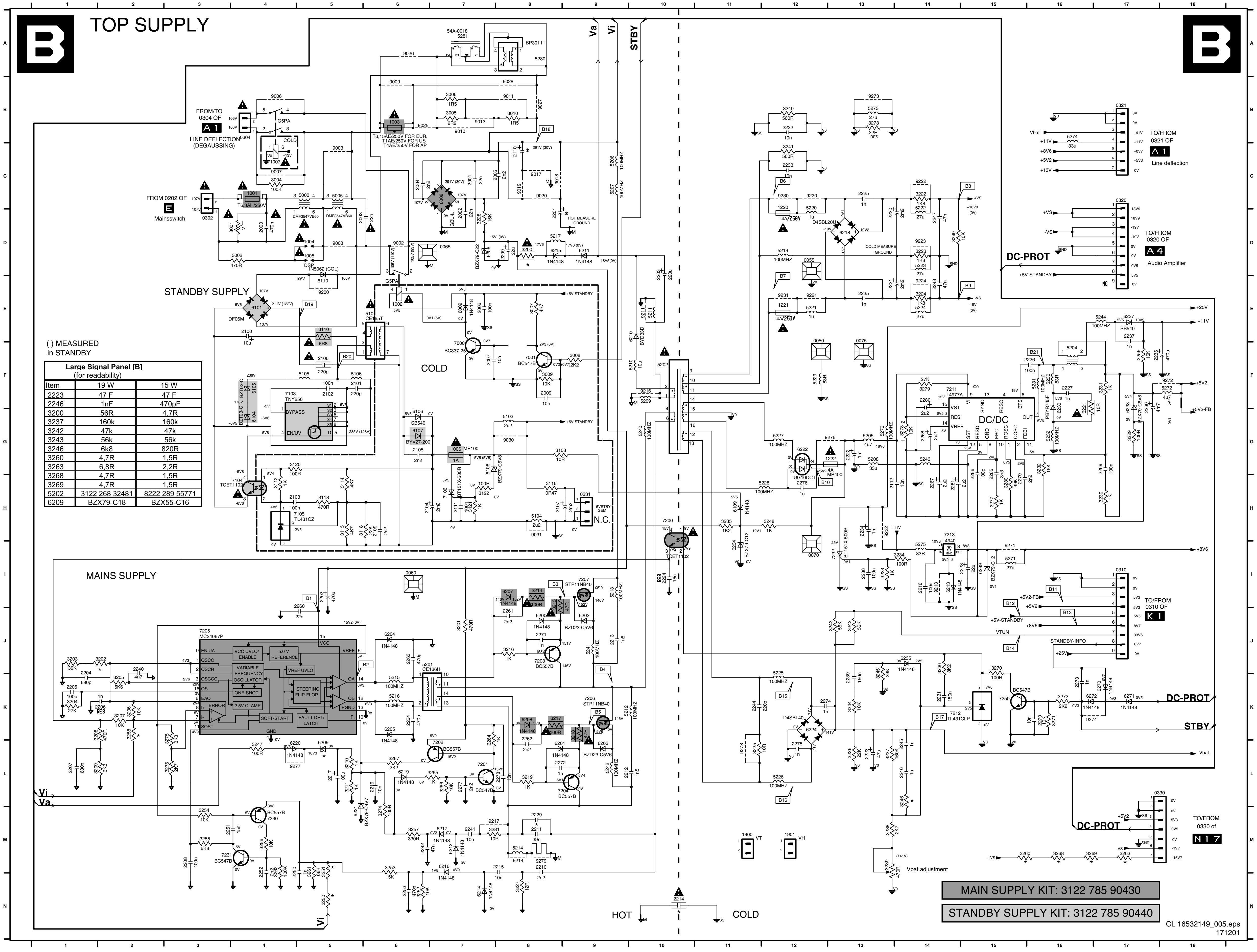
9844	E7
9845	F7
9846	C2



Layout Large Signal Panel (Bottom View)


1 2 3 4 5 6 7 8 9
A B C D E F G
ATTENTION : LIVE PARTS
8204 004 35064
L1
L2
L14
L3
L4
L18
L16
L17
L12
L13
L19
91
L7
F3
L9
L10
L11
F1
L5
F2
F5
F4
A41
A40
A39
A43
A42
A38
A37
A36
A35
A33
A32
A31
A30
CL 16532149_031.eps
031201

Top Supply


B
TOP SUPPLY
STANDBY SUPPLY
MAINS SUPPLY
COLD
HOT
COLD
Va
Vi
STBY
FROM/TO
0304 OF
A1
LINE DEFLECTION
(DEGAUSSING)
FROM 0202 OF
E
Mainsswitch
T3,15AE/250V FOR EUR.
T1AE/250V FOR US
T4AE/250V FOR AP
BP30111
54A-0018
5281
HOT MEASURE GROUND
COLD MEASURE GROUND
1N5062 (COL)
DF06M
7103
TNY256
BYPASS
EN/UV
7104
TCET1102
7105
TL431CZ
7000
BC337-25
7001
BC547B
N.C.
+5VSTBY
GEM
7205
MC34067P
VCC UVLO/ENABLE
5.0 V REFERENCE
VARIABLE FREQUENCY OSCILLATOR
VREF UVLO
ONE-SHOT
STEERING FLIP-FLOP
ERROR
2.5V CLAMP
SOFT-START
FAULT DET/LATCH
GND
7206
STP11NB40
7207
STP11NB40
7200
TCET1102
7211
L4977A
DC/DC
7212
TL431CLP
7213
L4940
7250
BC547B
7230
BC557B
7231
BC547B
TO/FROM
0321 OF
A1
Line deflection
TO/FROM
0320 OF
A4
Audio Amplifier
DC-PROT
TO/FROM
0310 OF
K1
TO/FROM
0330 of
N17
DC-PROT
STBY
Vbat
Vbat adjustment
+25V
+11V
+5V2
+5V2-FB
+8V6

( ) MEASURED
in STANDBY

Large Signal Panel [B] (for readability)		
Item	19 W	15 W
2223	47 F	47 F
2246	1nF	470pF
3200	56R	4,7R
3237	160k	160k
3242	47k	47k
3243	56k	56k
3246	6k8	820R
3260	4,7R	1,5R
3263	6,8R	2,2R
3268	4,7R	1,5R
3269	4,7R	1,5R
5202	3122 268 32481	8222 289 55771
6209	BZX79-C18	BZX55-C16

MAIN SUPPLY KIT: 3122 785 90430

STANDBY SUPPLY KIT: 3122 785 90440

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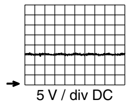
171201

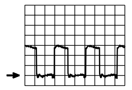
0050 F12	3114 H5	5274 B16
0055 D12	3115 H5	5275 I14
0060 I6	3116 H8	5276 G13
0065 D7	3118 H5	5280 A8
0070 I12	3120 G4	5281 A7
0075 F13	3121 H7	6008 C7
0302 D3	3122 H7	6009 E7
0304 B4	3200 D8	6101 E4
0310 I17	3201 J7	6104 G4
0320 C17	3202 J2	6105 F4
0321 B17	3203 J1	6106 G6
0330 L17	3204 K1	6107 G6
0331 H9	3205 K2	6108 G7
1001 C4	3206 K2	6109 H11
1002 E6	3207 K2	6110 E5
1003 B6	3208 K1	6200 J8
1004 D5	3209 L1	6201 L8
1005 D5	3210 L5	6202 J9
1006 G7	3211 L5	6203 L9
1007 C4	3214 I8	6204 J6
1220 C12	3215 I8	6205 K6
1221 E12	3216 J8	6206 D7
1222 G13	3217 K8	6207 I8
1900 M11	3218 K9	6208 K8
1901 M12	3219 L8	6209 L5
2000 D4	3221 F16	6210 E10
2001 C7	3222 C14	6211 D9
2002 D7	3223 D14	6212 M7
2003 D5	3224 E14	6213 I14
2004 C6	3225 L11	6214 N7
2005 C8	3226 L13	6215 D8
2006 E7	3227 N8	6216 M7
2007 F7	3228 D7	6217 M7
2009 F8	3229 G17	6218 D13
2100 E4	3230 H17	6219 L6
2101 F5	3231 F17	6220 L4
2102 F5	3232 G16	6221 M5
2103 H4	3233 I13	6222 G12
2104 H6	3234 I14	6224 K12
2105 G6	3235 H11	6230 F16
2106 F5	3236 J14	6234 I11
2107 H8	3237 L13	6235 J14
2109 H6	3238 M13	6237 E17
2110 C8	3239 M13	6238 F17
2111 H7	3240 B12	6239 I15
2112 H13	3241 C12	6270 K17
2201 D8	3242 J13	6271 K17
2202 I5	3243 J13	6272 K16
2203 D10	3244 K13	7000 F7
2204 K1	3245 J13	7001 F8
2205 K1	3246 L14	7103 F4
2206 K2	3247 L4	7104 H4
2207 L1	3248 H12	7105 H4
2208 M3	3249 D14	7106 H7
2209 D8	3250 N5	7200 H10
2210 M8	3251 M5	7201 L7
2211 M8	3252 N6	7202 L7
2212 L9	3253 M6	7203 J8
2213 J9	3254 M3	7204 L8
2214 N10	3255 M3	7205 J3
2215 M8	3256 M4	7206 K9
2216 I14	3257 M6	7207 I9
2217 L5	3258 K2	7211 F14
2219 L6	3259 F17	7212 K15
2220 D13	3260 M15	7213 H14
2221 E13	3261 M5	7230 M4
2222 G13	3262 M4	7231 M4
2223 L13	3263 M17	7232 I13
2224 I10	3264 K7	7250 K15
2225 C13	3265 L7	9002 D6
2226 F16	3266 L7	9003 C5
2227 F16	3267 L6	9006 B4
2228 I15	3268 M16	9007 C4
2229 M8	3269 M16	9008 D5
2230 F17	3270 J15	9009 B6
2231 K14	3271 K16	9010 B7
2232 B12	3272 K16	9011 B8
2233 C12	3273 B13	9013 B7
2234 H13	3274 M6	9017 C8
2235 E13	3275 K3	9018 C8
2236 F17	3276 L3	9019 C8
2237 E17	3277 H15	9020 C8
2238 I13	3278 G14	9025 B6
2239 K13	3279 F14	9026 A6
2240 J2	3280 H15	9027 B8
2241 M7	3281 M7	9028 B8
2242 M6	3998 M15	9030 G8
2244 K11	5000 C5	9031 H8
2245 L14	5005 C5	9200 E5
2246 L14	5101 E6	9211 E10
2247 D14	5103 G8	9213 I14
2248 E14	5104 H8	9214 M8
2250 M4	5105 F5	9216 F10
2251 M3	5106 F5	9217 M7
2252 M4	5201 J6	9220 C12
2253 N6	5202 F10	9221 E12
2260 J5	5204 F16	9222 C14
2261 J8	5205 G13	9223 D14
2262 L8	5206 C9	9224 E14
2263 J6	5207 C9	9230 C12
2264 K6	5208 G13	9231 E12
2265 G15	5209 F10	9232 H13
2266 G15	5210 F10	9271 I15
2267 H14	5211 E10	9272 F18
2268 G14	5212 K9	9273 B13
2269 G17	5213 I9	9274 K16
2270 K16	5214 M8	9276 G13
2271 J8	5215 K6	9277 L4
2272 L8	5216 K6	9278 L11
2273 K16	5217 D8	9279 M8
2274 K12	5219 D12	
2275 L12	5220 D12	
2276 H12	5221 E12	
2277 L7	5222 D14	
2278 L8	5223 D14	
2279 H15	5224 E14	
2280 F14	5225 K12	
2281 H14	5226 L12	
3001 D4	5227 G12	
3002 D4	5228 H12	
3003 F8	5229 F12	
3004 C4	5230 F16	
3005 B7	5231 F16	
3006 B7	5232 G16	
3007 E8	5240 G10	
3008 F9	5241 J9	
3009 F8	5242 L9	
3010 B8	5243 G14	
3108 G8	5244 E17	
3110 E5	5271 I15	
3112 H4	5272 F18	
3113 H5	5273 B13	

B1



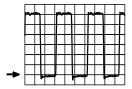
5 V / div DC
10µs / div

B2



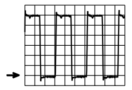
5 V / div DC
5µs / div

B3



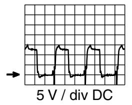
50 V / div DC
5µs / div

B4



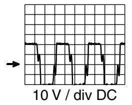
50 V / div DC
5µs / div

B5



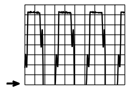
5 V / div DC
5µs / div

B6



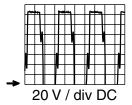
10 V / div DC
5µs / div

B15



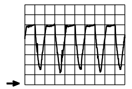
20 V / div DC
5µs / div

B16



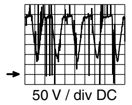
20 V / div DC
5µs / div

B19



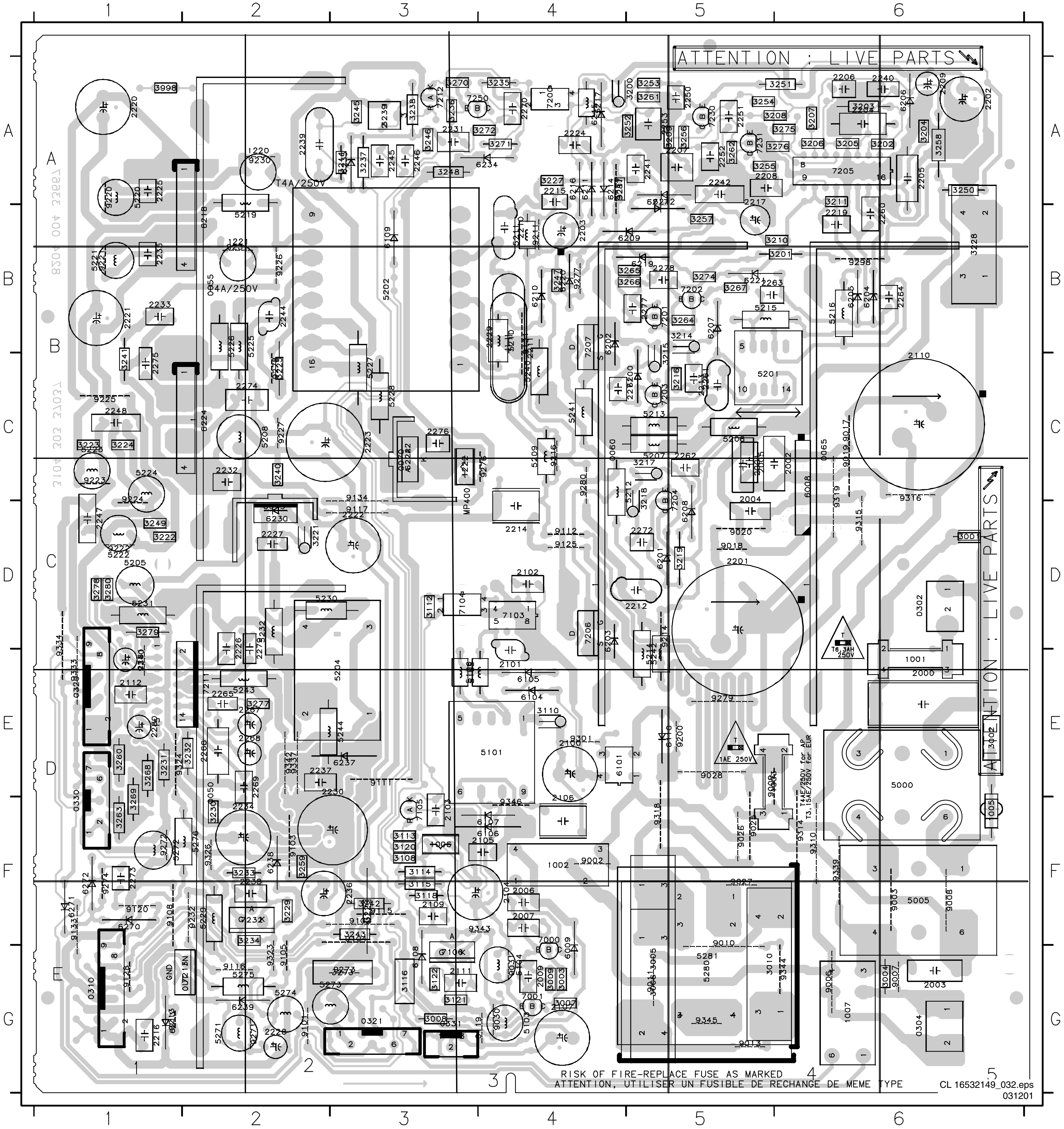
50 V / div DC
5ms / div

B20



50 V / div DC
5ms / div

Layout Top Supply (Top View)



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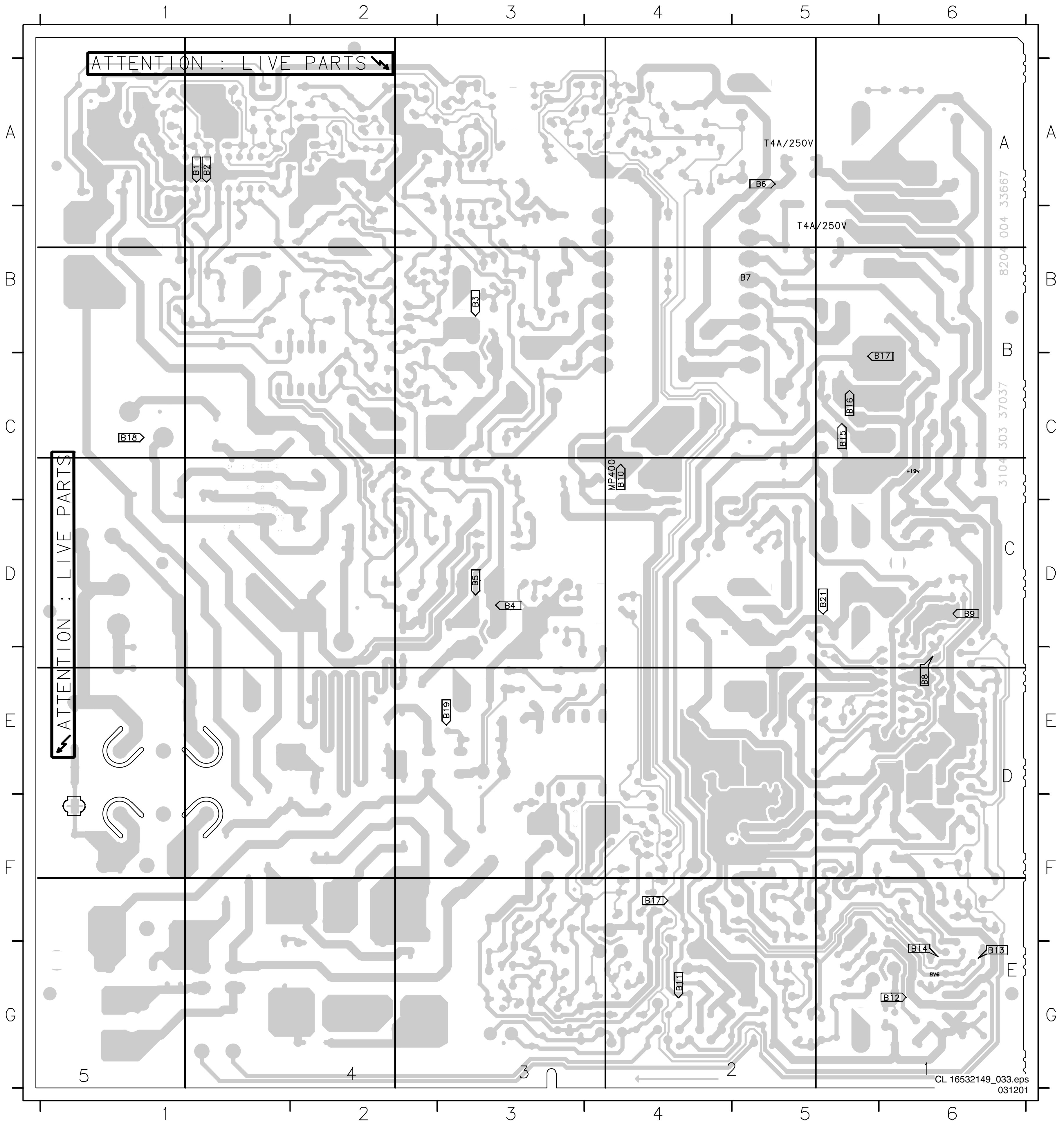
031201

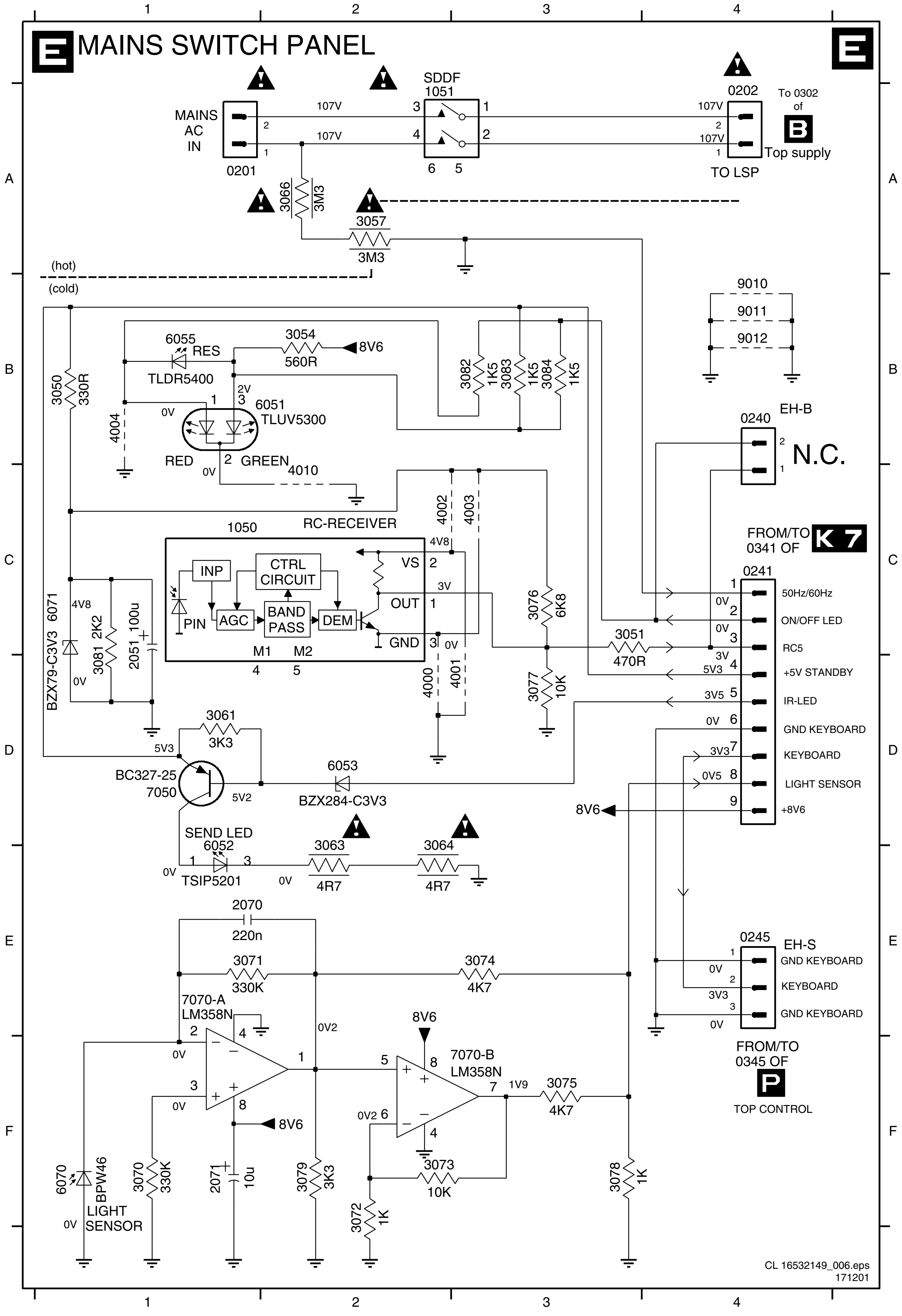
0050	E2	2267	E2	3267	B5	6230	D2	9319	C6
0055	B2	2268	E2	3268	E1	6234	A4	9323	G2
0060	C4	2269	E2	3269	F1	6235	A3	9324	F1
0065	C6	2270	A4	3270	A3	6237	E3	9326	F2
0070	C3	2271	C4	3271	A4	6238	F2	9333	E1
0075	D2	2272	D5	3272	A4	6239	G2	9334	D1
0302	D6	2273	F1	3273	G3	6270	F1	9337	E2
0304	G6	2274	C2	3274	B5	6271	F1	9339	F6
0310	G1	2275	C1	3275	A5	6272	F1	9340	E1
0320	E1	2276	C3	3276	A6	7000	F4	9342	E2
0321	G3	2277	B4	3277	E2	7001	G4	9343	F4
0330	F1	2278	B5	3278	D1	7103	E4	9344	G6
0331	G4	2279	D2	3279	D1	7104	D3	9345	G5
1001	D6	2280	E1	3280	D1	7105	E3	9346	F4
1002	F4	2281	D1	3281	A5	7106	G3		
1003	E6	3001	D6	3998	A1	7200	A4		
1005	F6	3002	E6	5000	E6	7201	B5		
1006	F3	3003	G4	5005	F6	7202	B5		
1007	G6	3004	G6	5101	E3	7203	C5		
1220	A2	3005	G4	5103	G4	7204	C5		
1221	B2	3006	G4	5104	G4	7205	A6		
1222	C3	3007	G4	5105	E4	7206	D4		
2000	E6	3008	G3	5106	E3	7207	C4		
2001	C5	3009	G4	5201	C6	7211	D2		
2002	C5	3010	G6	5202	B2	7212	A3		
2003	G6	3108	F3	5204	E3	7213	G2		
2004	C5	3110	E4	5205	D1	7230	A5		
2005	C5	3112	D3	5206	C5	7231	A5		
2006	F4	3113	F3	5207	C5	7232	F2		
2007	F4	3114	F3	5208	C2	7250	A4		
2009	G4	3115	F3	5209	C4	9002	F4		
2100	E4	3116	G3	5210	C4	9003	F6		
2101	E4	3118	F3	5211	B4	9006	G6		
2102	D4	3120	F3	5212	D4	9007	G6		
2103	F3	3121	G3	5213	C5	9008	F6		
2104	F3	3122	G3	5214	E5	9009	E5		
2105	F4	3200	A4	5215	B5	9010	G5		
2106	F4	3201	B6	5216	B6	9011	G5		
2107	G4	3202	A6	5217	A4	9013	G6		
2109	F3	3203	A6	5219	B2	9017	C6		
2110	C6	3204	A6	5220	A1	9018	D5		
2111	G3	3205	A6	5221	B1	9019	C6		
2112	E1	3206	A6	5222	D1	9020	D5		
2201	D5	3207	A6	5223	C1	9025	F5		
2202	A6	3208	A6	5224	C1	9026	F5		
2203	B4	3209	A5	5225	B2	9027	F5		
2204	A6	3210	B6	5226	B2	9028	E5		
2205	A6	3211	B6	5227	C3	9030	G4		
2206	A6	3214	C5	5228	C3	9031	G4		
2207	A5	3215	C5	5229	F2	9101	G2		
2208	A5	3216	C5	5230	D2	9102	F3		
2209	A6	3217	C5	5231	D1	9103	F2		
2210	B4	3218	C5	5232	D2	9104	G3		
2211	C4	3219	D5	5240	C4	9105	G2		
2212	D5	3221	D2	5241	C4	9108	F1		
2213	C5	3222	D1	5242	E5	9111	E3		
2214	D4	3223	C1	5243	E2	9112	D4		
2215	A4	3224	C1	5244	E2	9115	F3		
2216	G1	3225	C2	5271	G2	9116	G2		
2217	A5	3226	F3	5272	F1	9117	D3		
2219	B6	3227	A4	5273	G3	9119	G3		
2220	A1	3228	B6	5274	G2	9120	F1		
2221	B1	3229	F2	5275	G2	9125	D4		
2222	D3	3230	E2	5276	F2	9128	G1		
2223	C3	3231	E1	5280	G4	9131	B4		
2224	A4	3232	E2	5281	G5	9133	F1		
2225	A1	3233	F2	6008	C6	9134	C3		
2226	D2	3234	G2	6009	G4	9200	E5		
2227	D2	3235	A4	6101	E4	9211	B4		
2228	G2	3236	A3	6104	E4	9213	G1		
2229	B4	3237	A3	6105	E4	9214	D5		
2230	E3	3238	A3	6106	F4	9216	C4		
2231	A3	3239	A3	6107	F4	9217	A4		
2232	C2	3240	C2	6108	G3	9220	A1		
2233	B1	3241	C1	6109	B3	9221	B1		
2234	F2	3242	F3	6110	E5	9222	D1		
2235	B1	3243	F2	6200	C5	9223	C1		
2236	F3	3244	A3	6201	D5	9224	D1		
2237	E2	3245	A3	6202	B4	9225	C1		
2238	F2	3246	A3	6203	D4	9226	B2		
2239	A3	3247	B4	6204	B6	9227	C2		
2240	A6	3248	A3	6205	B6	9230	A2		
2241	A5	3249	D1	6206	A6	9231	B2		
2242	B5	3250	A6	6207	B5	9232	F1		
2244	B2	3251	A6	6208	D5	9271	G2		
2245	A3	3252	A4	6209	B5	9272	F1		
2246	A3	3253	A5	6210	B4	9273	G3		
2247	D1	3254	A5	6211	B4	9274	F1		
2248	C1	3255	A5	6212	A5	9276	C4		
2250	A5	3256	A5	6213	G1	9277	B4		
2251	A5	3257	B5	6214	A4	9278	C2		
2252	A5	3258	A6	6215	A4	9279	E5		
2253	A5	3259	F2	6216	B4	9280	C4		
2260	B6	3260	E1	6217	B5	9298	B6		
2261	C5	3261	A5	6218	B1	9301	E4		
2262	C5	3262	A5	6219	B5	9310	F6		
2263	B5	3263	F1	6220	B4	9314	F6		
2264	B6	3264	B5	6221	B5	9315	D6		
2265	E2	3265	B5	6222	C3	9316	D6		
2266	E2	3266	B4	6224	C1	9318	F5		

Layout Top Supply (Top View)


1
2
3
4
5
6
A
B
C
D
E
F
G
ATTENTION : LIVE PARTS
ATTENTION : LIVE PARTS
B1
B2
B3
B4
B5
B6
B7
B8
B9
MP400
B10
B11
B12
B13
B14
B15
B16
B17
B17
B18
B19
B21
T4A/250V
T4A/250V
+19v
8V6
8204 004 33667
3104 303 37037
A
B
C
D
E
5
4
3
2
1

CL 16532149_033.eps
031201

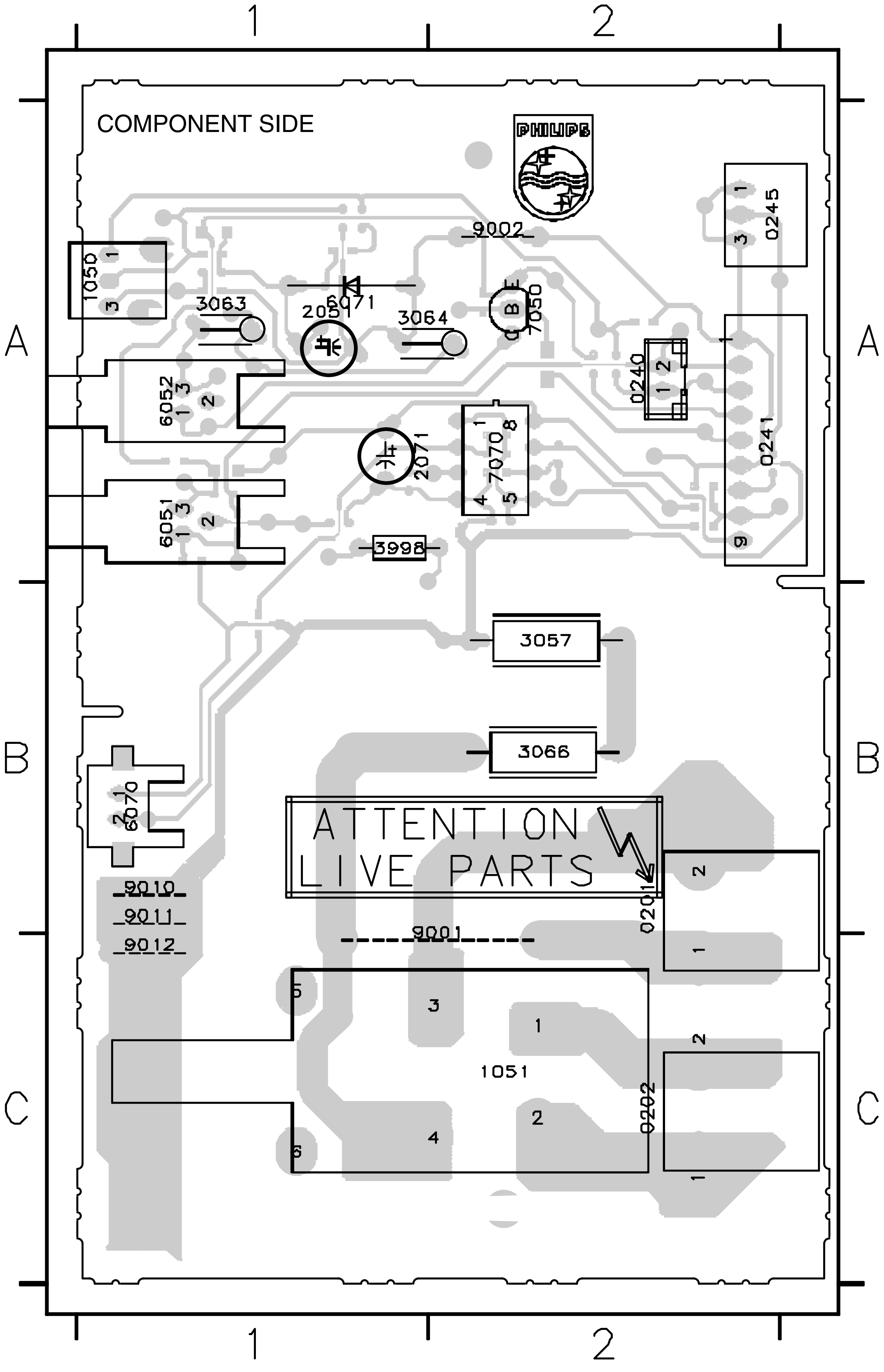
Mains Switch Panel


E MAINS SWITCH PANEL
MAINS AC IN
0201
SDDF 1051
107V
0202
To 0302 of B Top supply
TO LSP
3066 3M3
3057 3M3
(hot)
(cold)
9010
9011
9012
6055 RES
TLDR5400
3054 560R
8V6
3050 330R
4004
6051 TLUV5300
RED
GREEN
4010
3082 1K5
3083 1K5
3084 1K5
0240 EH-B
N.C.
1050 RC-RECEIVER
4002
4003
INP
CTRL CIRCUIT
PIN
AGC
BAND PASS
DEM
VS
OUT
GND
M1 M2
FROM/TO 0341 OF K 7
0241
50Hz/60Hz
ON/OFF LED
RC5
+5V STANDBY
IR-LED
GND KEYBOARD
KEYBOARD
LIGHT SENSOR
+8V6
3076 6K8
3051 470R
3077 10K
4000
4001
BZX79-C3V3 6071
3081 2K2
2051 100u
3061 3K3
BC327-25 7050
6053 BZX284-C3V3
SEND LED 6052 TSIP5201
3063 4R7
3064 4R7
0245 EH-S
GND KEYBOARD
KEYBOARD
GND KEYBOARD
FROM/TO 0345 OF P TOP CONTROL
2070 220n
3071 330K
3074 4K7
7070-A LM358N
7070-B LM358N
3075 4K7
3073 10K
3072 1K
3078 1K
3079 3K3
2071 10u
3070 330K
6070 BPW46 LIGHT SENSOR
CL 16532149_006.eps 171201

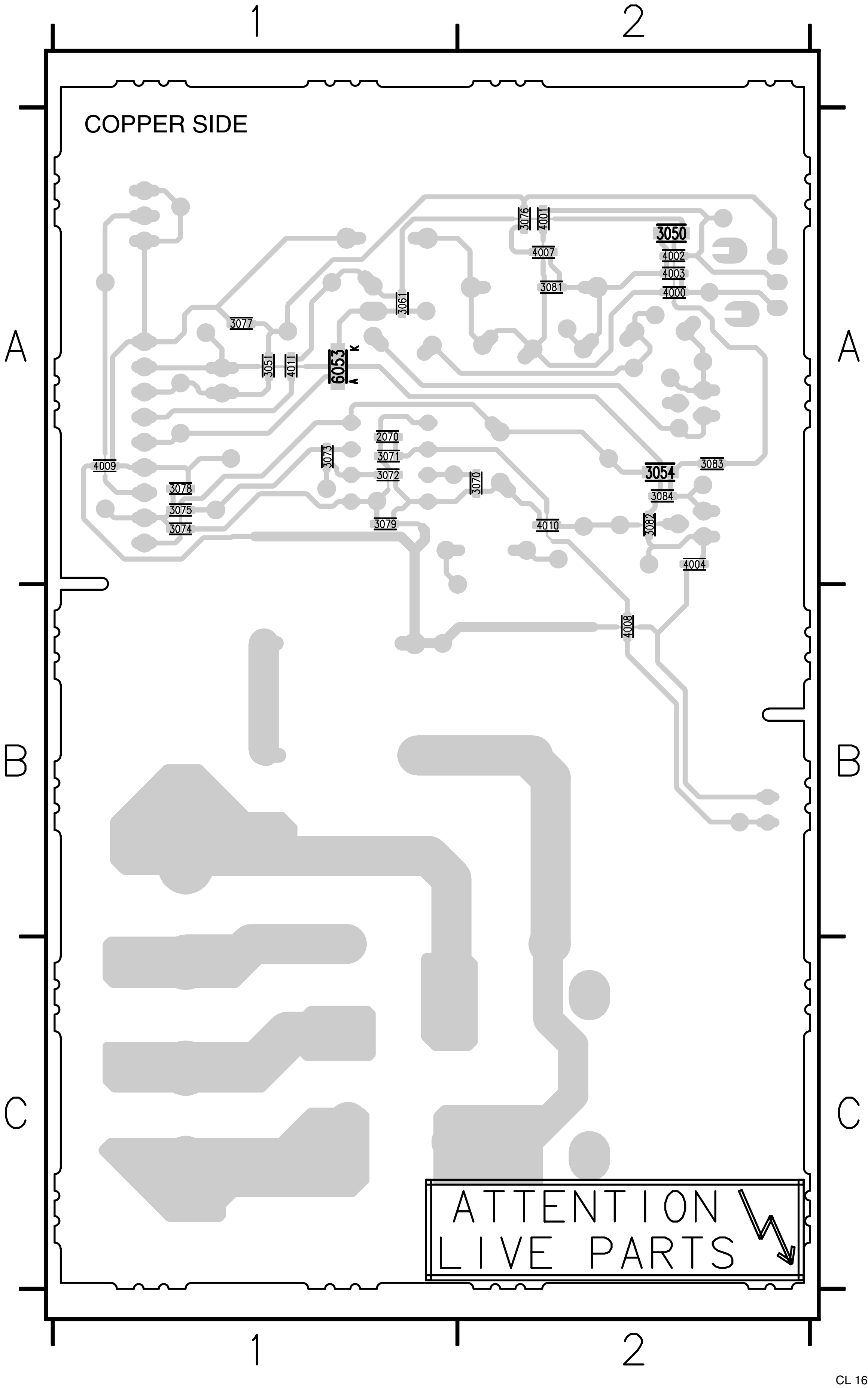
0201	A1
0202	A4
0240	B4
0241	C4
0245	E4
1050	C1
1051	A2
2051	C1
2070	E1
2071	F1
3050	B1
3051	C3
3054	B2
3057	A2
3061	D1
3063	E2
3064	E2
3066	A2
3070	F1
3071	E1
3072	F2
3073	F2
3074	E3
3075	F3
3076	C3
3077	D3
3078	F3
3079	F2
3081	D1
3082	B3
3083	B3
3084	B3
3998	F4
4000	D2
4001	D3
4002	C2
4003	C3
4004	B1
4010	C2
6051	B1
6052	E1
6053	D2
6055	B1
6070	F1
6071	C1
7050	D1
7070-A	E1
7070-B	F2
9010	B4
9011	B4
9012	B4

Personal Notes:

Layout Mains Switch Panel


1
2
A
B
C
COMPONENT SIDE
PHILIPS
1050
3063
2051
6071
3064
7050
C B E
9002
0245
0240
0241
6052
6051
2071
7070
3998
3057
3066
6070
ATTENTION
LIVE PARTS
0201
9010
9011
9012
9001
1051
0202

0201	B2
0202	C2
0240	A2
0241	A2
0245	A2
1050	A1
1051	C2
2051	A1
2071	A1
3057	B2
3063	A1
3064	A2
3066	B2
3998	A1
6051	A1
6052	A1
6070	B1
6071	A1
7050	A2
7070	A2
9001	B2
9002	A2
9010	B1
9011	B1
9012	C1

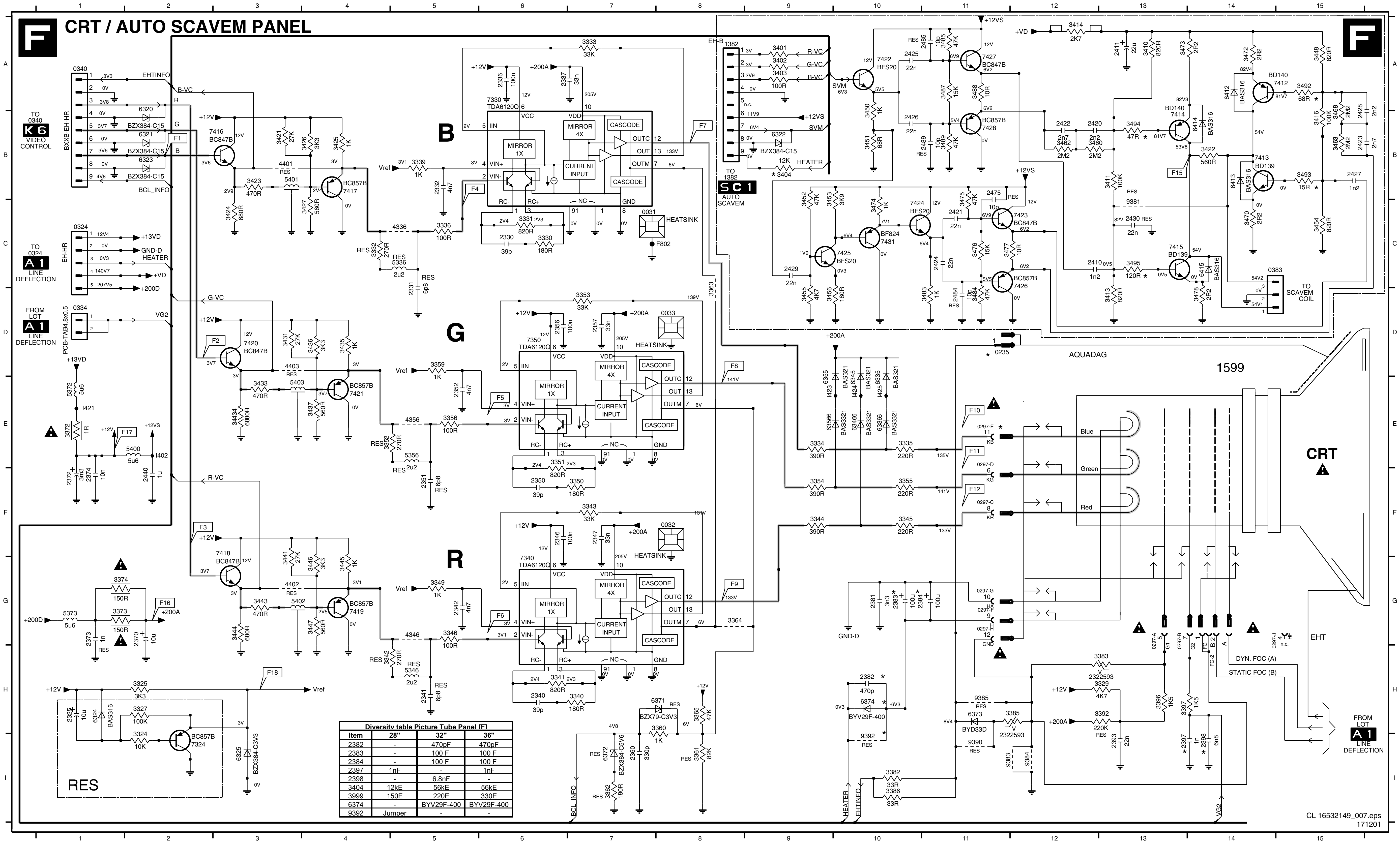

1
2
A
B
C
COPPER SIDE
3076
4001
3050
4007
4002
4003
3081
4000
3061
3077
3051
4011
6053
2070
3073
3071
3072
4009
3078
3075
3074
3079
3070
3054
3083
3084
4010
3082
4004
4008
ATTENTION
LIVE PARTS

2070	A1
3050	A2
3051	A1
3054	A2
3061	A1
3070	A2
3071	A1
3072	A1
3073	A1
3074	A1
3075	A1
3076	A2
3077	A1
3078	A1
3079	A1
3081	A2
3082	A2
3083	A2
3084	A2
4000	A2
4001	A2
4002	A2
4003	A2
4004	A2
4007	A2
4008	B2
4009	A1
4010	A2
4011	A1
6053	A1

CL 16532149_034.eps
191201

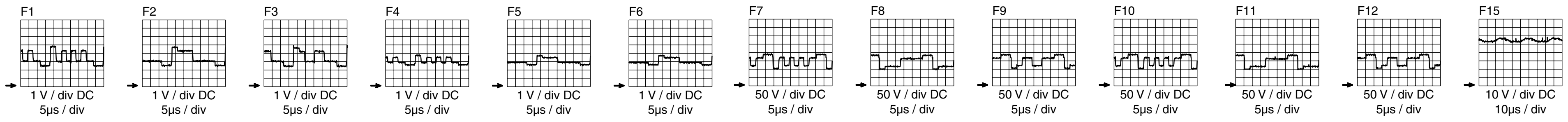
CRT / Auto SCAVEM Panel

0031 C7
0032 F8
0033 D8
0235 D11
0297-A G13
0297-B G13
0297-C F11
0297-D E11
0297-E E11
0297-F G11
0297-G G11
0297-H G11
0297-J G15
0324 C1
0334 D1
0340 A1
0383 C14
1382 A8
2325 H1
2330 C6
2331 D5
2332 B5
2336 A6
2337 A6
2340 H6
2341 H5
2342 G5
2346 F6
2347 F7
2350 F6
2351 F5
2352 E5
2356 D6
2357 D7
2360 I7
2370 G2
2372 F1
2373 G1
2374 F1
2381 G10
2382 H10
2383 G10
2384 G11
2393 I13
2397 I13
2398 I14
2410 C12
2411 A13
2420 B12
2421 C11
2422 B12
2423 B15
2424 C11
2425 A10
2426 B10
2427 B15
2428 B15
2429 C9
2430 C13
2440 F2
2475 B11
2484 D11
2485 A11
2489 B11
3324 I2
3325 H2
3327 H2
3329 H13
3330 C6
3331 C6
3332 C4
3333 A7
3334 E9
3335 E10
3336 C5
3339 B5
3340 H7
3341 H6
3342 H4
3343 F7
3344 F9
3345 F10
3346 G5
3349 G5
3350 F7
3351 E6
3352 E4
3353 D7
3354 F9
3355 F10
3356 E5
3359 D5
3360 H8
3361 I8
3362 I7
3363 D8
3364 G8
3365 H8
3372 E1
3373 G1
3374 G1
3382 I10
3383 H13
3385 H12
3386 I10
3392 H13
3396 H13
3397 H13
3401 A9
3402 A9
3403 A9
3404 B9
3410 A13
3411 B13
3413 D13
3414 A12
3416 B15
3421 B3
3422 B14
3423 B3
3424 C3
3425 B4
3426 B4
3427 C4
3431 D3
3433 E3
3434 E3
3435 D4
3436 D4
3437 E4
3441 G3
3443 G3
3444 G3
3445 G4
3446 G4
3447 G4
3448 A15
3450 B10
3451 B10
3452 C9
3453 C9
3454 C15
3455 D9
3456 D9
3460 B12
3462 B12
3463 B15
3468 B15
3470 C14
3472 A14
3473 A13
3474 C10
3475 C11
3476 C11
3477 C11
3478 D14
3483 D11
3484 D11
3485 A11
3487 A11
3488 A11
3489 B11
3492 A15
3493 B15
3494 B13
3495 C13
3999 I5
4336 C5
4346 G5
4356 E5
4401 B3
4402 G3
4403 D3
5336 C5
5346 H5
5356 E5
5372 E1
5373 G1
5400 E2
5401 B3
5402 G3
5403 E3
6320 B2
6321 B2
6322 B9
6323 B2
6324 H1
6325 I3
6335 E10
6336 E10
6345 E10
6346 E10
6355 E9
6356 E9
6371 H8
6372 I7
6373 H11
6374 H10
6412 A14
6413 B14
6414 B14
6415 C14
7324 I2
7330 A6
7340 G6
7350 D6
7412 A15
7413 B14
7414 B13
7415 C13
7416 B2
7417 B4
7418 F3
7419 G4
7420 D3
7421 E4
7422 A10
7423 C12
7424 C10
7425 C10
7426 C12
7427 A11
7428 B11
7431 C10
9381 C13
9383 I12
9384 I12
9385 H11
9390 I11
9392 I10

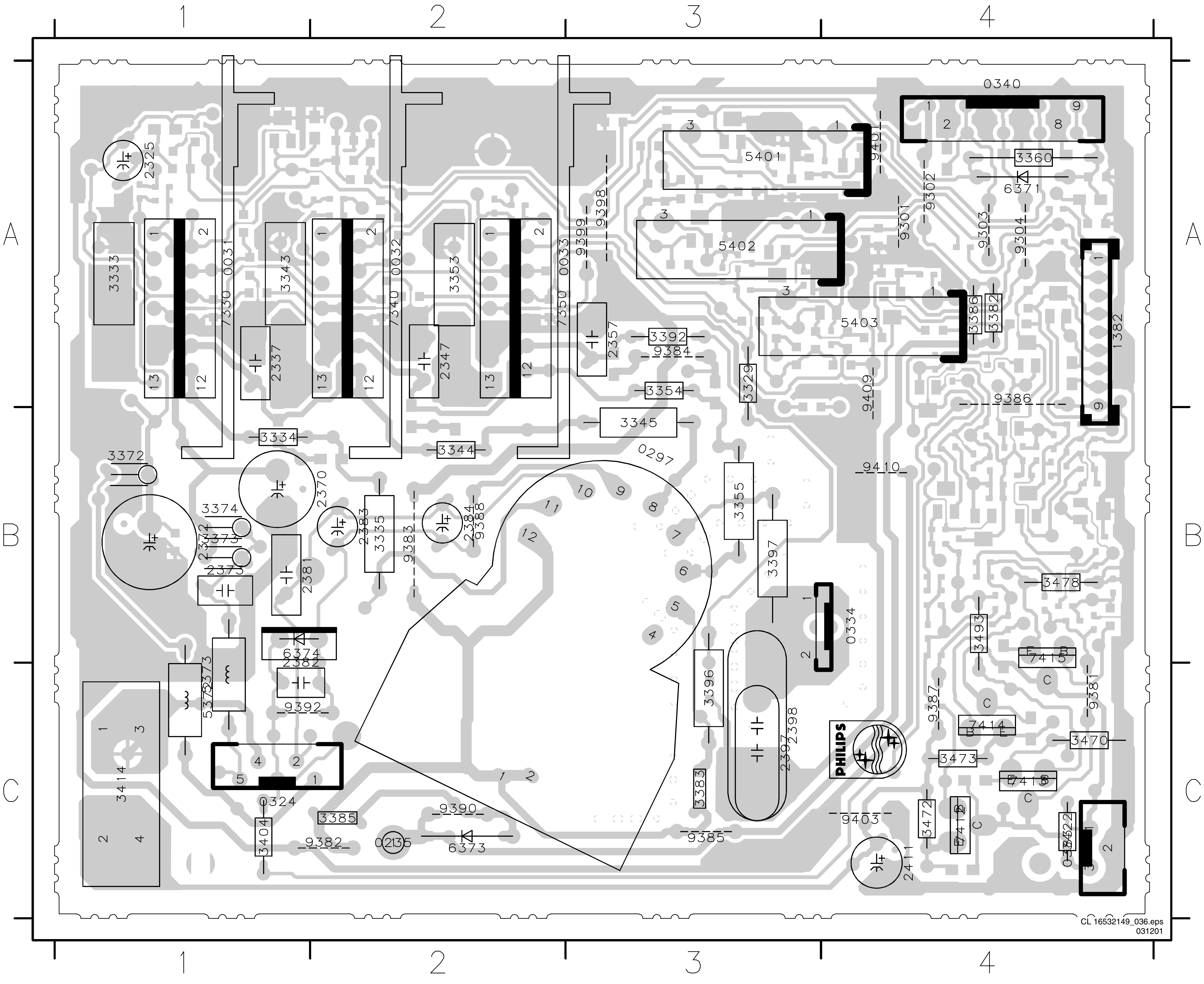

F
CRT / AUTO SCAVEM PANEL
TO 0340 K6 VIDEO CONTROL
TO 0324 A1 LINE DEFLECTION
FROM LOT A1 LINE DEFLECTION
TO 1382 SC1 AUTO SCAVEM
TO SCAVEM COIL
FROM LOT A1 LINE DEFLECTION
B
G
R
TDA6120Q
MIRROR 1X
MIRROR 4X
CURRENT INPUT
CASCODE
HEATSINK
EHTINFO
BCL_INFO
B-VC
G-VC
R-VC
VG2
HEATER
SVM
+12V
+12VS
+200A
+200D
+13VD
+VD
Vref
GND-D
AQUADAG
1599
CRT
Blue
Green
Red
EHT
DYN. FOC (A)
STATIC FOC (B)
RES
7416 BC847B
7417 BC857B
7420 BC847B
7421 BC857B
7418 BC847B
7419 BC857B
7324 BC857B
7422 BFS20
7427 BC847B
7428 BC857B
7424 BFS20
7431 BF824
7425 BFS20
7423 BC847B
7426 BC857B
7414 BD140
7412 BD140
7413 BD139
7415 BD139
F1
F2
F3
F4
F5
F6
F7
F8
F9
F10
F11
F12
F15
F16
F17
F18
CL 16532149_007.eps
171201

Diversity table Picture Tube Panel [F]			
Item	**28"**	**32"**	**36"**
2382	-	470pF	470pF
2383	-	100 F	100 F
2384	-	100 F	100 F
2397	1nF	-	1nF
2398	-	6.8nF	-
3404	12kE	56kE	56kE
3999	150E	220E	330E
6374	-	BYV29F-400	BYV29F-400
9392	Jumper	-	-

USE HEATSINK-GROUND AS MEASUREGROUND

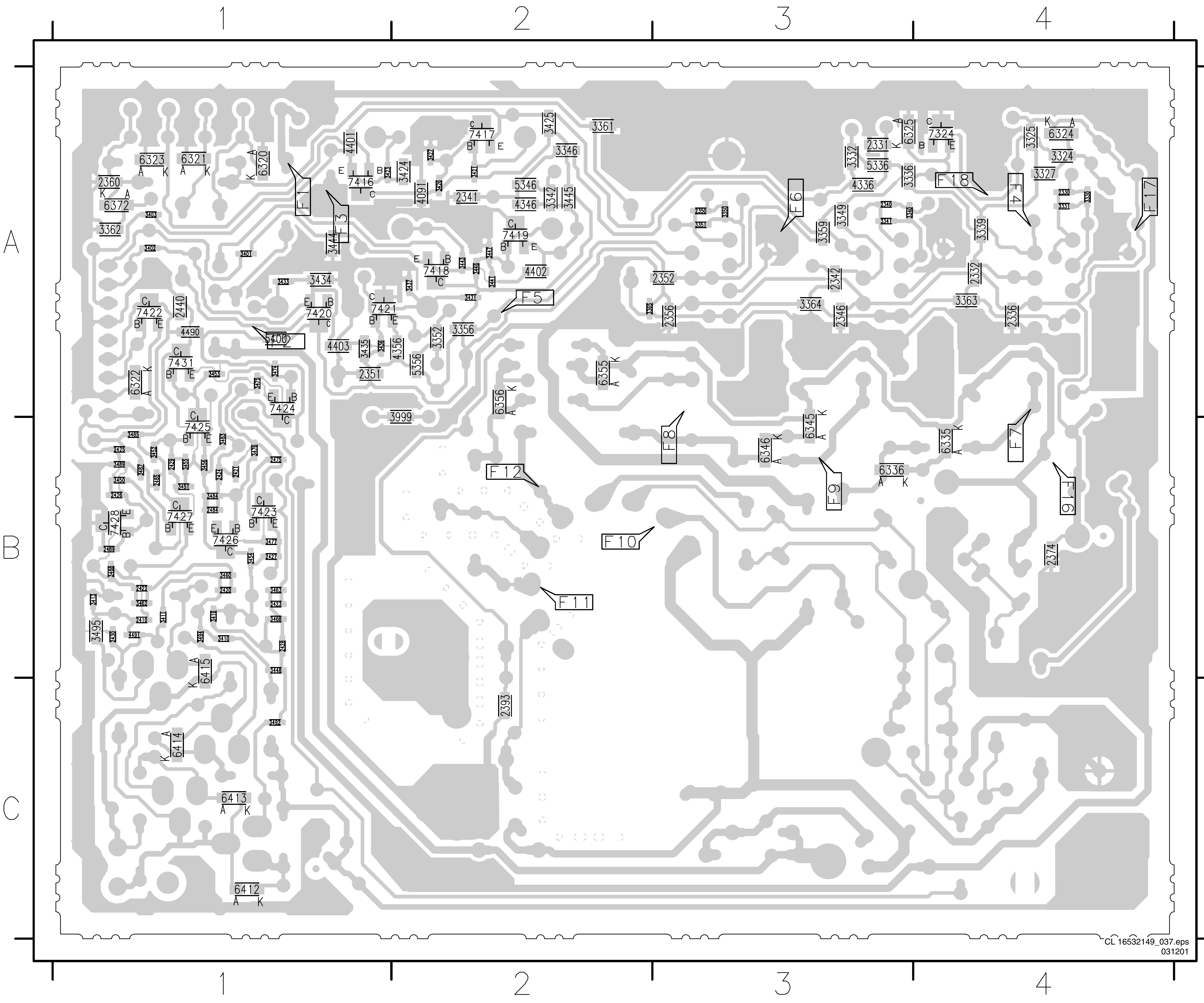


Layout CRT / Auto SCAVEM Panel (Top View)


1
2
3
4
A
B
C
0340
5401
5402
5403
3360
6371
9401
9302
9301
9303
9304
1382
3386
3382
9386
9410
9409
3329
2325
3333
0031
7330
3343
2337
0032
7340
3353
2347
0033
7350
9399
9398
2357
3392
9384
3354
3345
3334
3344
0297
3372
3374
3373
2372
2373
2370
2383
3335
9383
2384
9388
2381
6374
2382
5373
5372
9392
3414
0324
3404
3385
9382
0235
9390
6373
9385
3383
3355
3397
3396
2397
2398
0334
PHILIPS
9403
2411
3472
7412
7413
7414
7415
3473
3470
3478
3493
9387
9381
3422
0383
CL 16532149_036.eps
031201

0031	A1
0032	A2
0033	A3
0235	C2
0297	B3
0324	C1
0334	B4
0340	A4
0383	C4
1382	A4
2325	A1
2337	A1
2347	A2
2357	A3
2370	B1
2372	B1
2373	B1
2381	B2
2382	C1
2383	B2
2384	B2
2397	C3
2398	C3
2411	C4
3329	A3
3333	A1
3334	B2
3335	B2
3343	A1
3344	B2
3345	A3
3353	A2
3354	A3
3355	B3
3360	A4
3372	B1
3373	B1
3374	B1
3382	A4
3383	C3
3385	C2
3386	A4
3392	A3
3396	C3
3397	B3
3404	C1
3414	C1
3422	C4
3470	C4
3472	C4
3473	C4
3478	B4
3493	B4
5372	C1
5373	C1
5401	A3
5402	A3
5403	A4
6371	A4
6373	C2
6374	B1
7330	A1
7340	A2
7350	A2
7412	C4
7413	C4
7414	C4
7415	B4
9301	A4
9302	A4
9303	A4
9304	A4
9381	C4
9382	C2
9383	B2
9384	A3
9385	C3
9386	A4
9387	C4
9388	B2
9390	C2
9392	C1
9398	A3
9399	A3
9401	A4
9403	C4
9409	A4
9410	B4

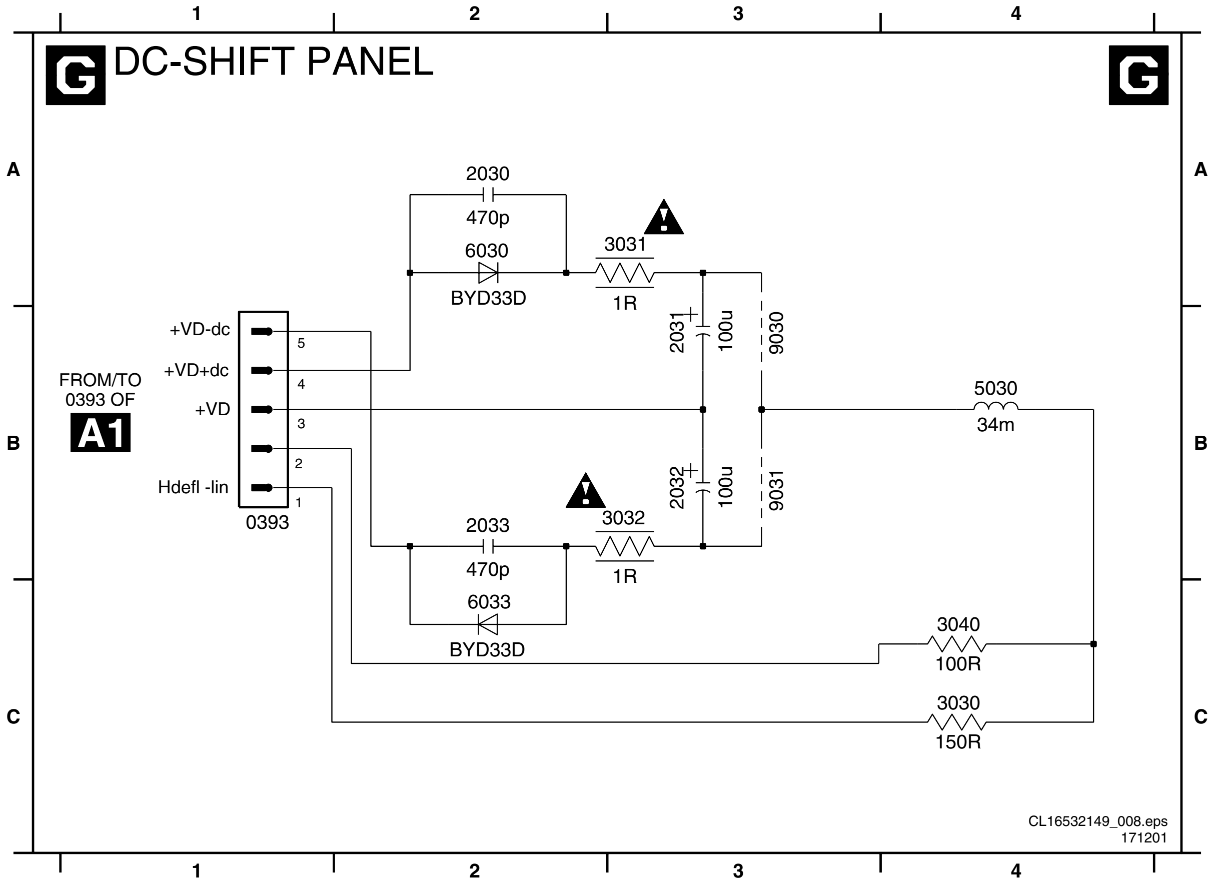
Layout CRT / Auto SCAVEM Panel (Bottom View)


1
2
3
4
A
B
C
F1
F2
F3
F4
F5
F6
F7
F8
F9
F10
F11
F12
F16
F17
F18
6323
6321
6320
6372
2360
3362
7417
7416
7418
7419
7420
7421
7422
7424
7425
7426
7427
7428
7431
7423
7324
6324
6325
6322
6355
6356
6345
6346
6335
6336
6415
6414
6413
6412
2331
5336
4336
3332
3336
3359
3349
3339
2332
2336
2342
2346
2352
2356
3364
3363
2341
4091
4401
3424
3425
3346
3361
5346
4346
3342
3445
4402
3434
3444
2440
4490
5400
4403
2351
4356
5356
3352
3356
3999
2393
2374
3495
3325
3324
3327
CL 16532149_037.eps
031201

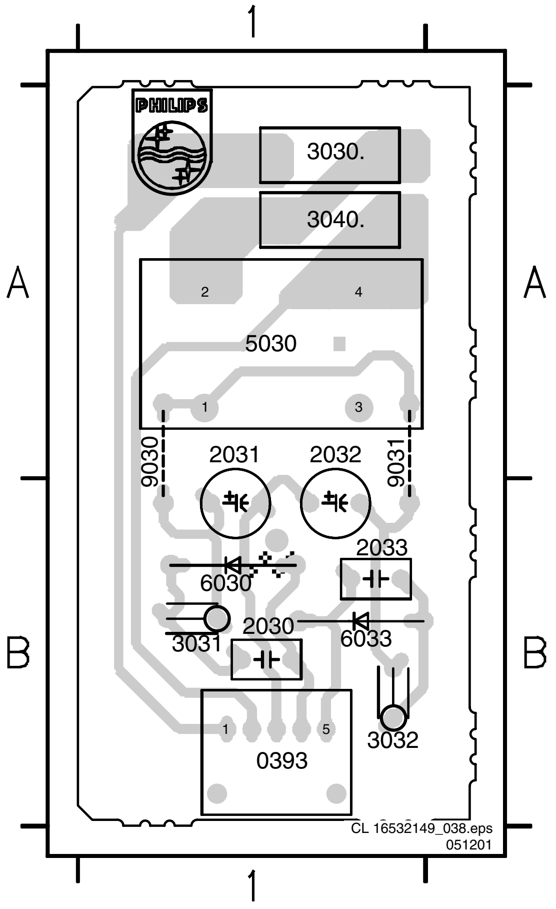
2330	A4
2331	A3
2332	A4
2336	A4
2340	A3
2341	A2
2342	A3
2346	A3
2350	A3
2351	A1
2352	A3
2356	A3
2360	A1
2374	B4
2393	C2
2410	B1
2420	B1
2421	B1
2422	B1
2423	B1
2424	B1
2425	B1
2426	B1
2427	B1
2428	B1
2429	B1
2430	B1
2440	A1
2475	B1
2484	B1
2485	B1
2489	B1
3324	A4
3325	A4
3327	A4
3330	A4
3331	A4
3332	A3
3336	A3
3339	A4
3340	A3
3341	A3
3342	A2
3346	A2
3349	A3
3350	A3
3351	A3
3352	A2
3356	A2
3359	A3
3361	A2
3362	A1
3363	A4
3364	A3
3365	A2
3401	A1
3402	A1
3403	A1
3410	B1
3411	B1
3413	B1
3416	B1
3421	A2
3423	A1
3424	A2
3425	A2
3426	A2
3427	A2
3431	A2
3433	A1
3434	A1
3435	A1
3436	A1
3437	A2
3441	A2
3443	A2
3444	A1
3445	A2
3446	A2
3447	A2
3448	B1
3450	B1
3451	B1
3452	B1
3453	A1
3454	B1
3455	B1
3456	B1
3460	B1
3462	B1
3463	B1
3468	B1
3474	A1
3475	A1
3476	B1
3477	B1
3483	B1
3484	B1
3485	B1
3487	B1
3488	B1
3489	B1
3492	C1
3494	B1
3495	B1
3999	A2
4091	A2
4336	A3
4346	A2
4356	A2
4401	A1
4402	A2
4403	A1
4490	A1
4491	B1
5336	A3
5346	A2
5356	A2
5400	A1
6320	A1
6321	A1
6322	A1
6323	A1
6324	A4
6325	A4
6335	B4
6336	B3
6345	B3
6346	B3
6355	A2
6356	A2
6372	A1
6412	C1
6413	C1
6414	C1
6415	B1
7324	A4
7416	A1
7417	A2
7418	A2
7419	A2
7420	A1
7421	A1
7422	A1
7423	B1
7424	B1
7425	B1
7426	B1
7427	B1
7428	B1
7431	A1

DC Shift Panel

0393	A1
2030	A2
2031	B3
2032	B3
2033	B2
3030	C4
3031	A3
3032	B3
3040	C4
5030	B4
6030	A2
6033	C2
9030	B3
9031	B3


G DC-SHIFT PANEL G
1 2 3 4
A B C
FROM/TO
0393 OF
A1
+VD-dc
+VD+dc
+VD
Hdefl -lin
5 4 3 2 1
0393
2030
470p
6030
BYD33D
3031
1R
2031
100u
9030
5030
34m
2032
100u
9031
2033
470p
3032
1R
6033
BYD33D
3040
100R
3030
150R
CL16532149_008.eps
171201

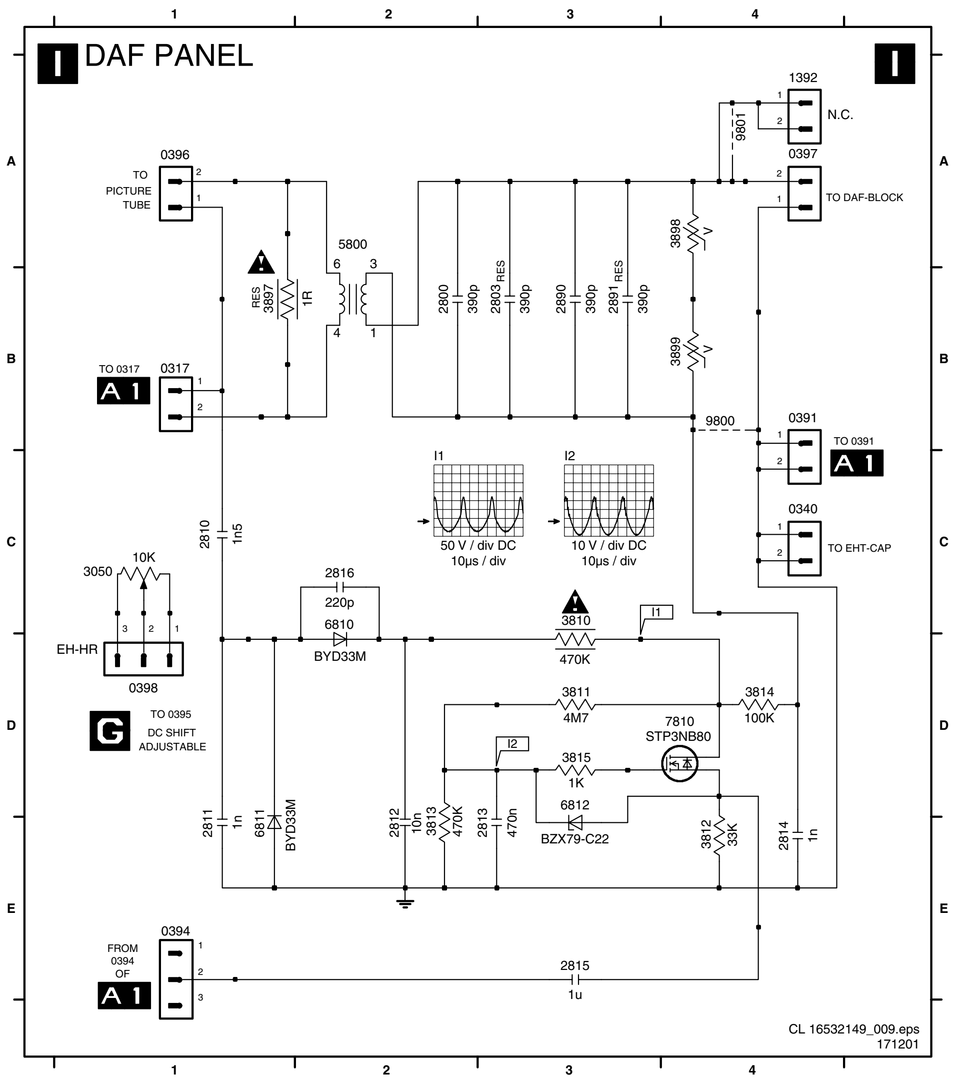
Layout DC Shift Panel


1
A B
PHILIPS
3030.
3040.
5030
2 4 1 3
9030 9031
2031 2032
2033
6030
2030
3031
6033
3032
0393
1 5
CL 16532149_038.eps
051201

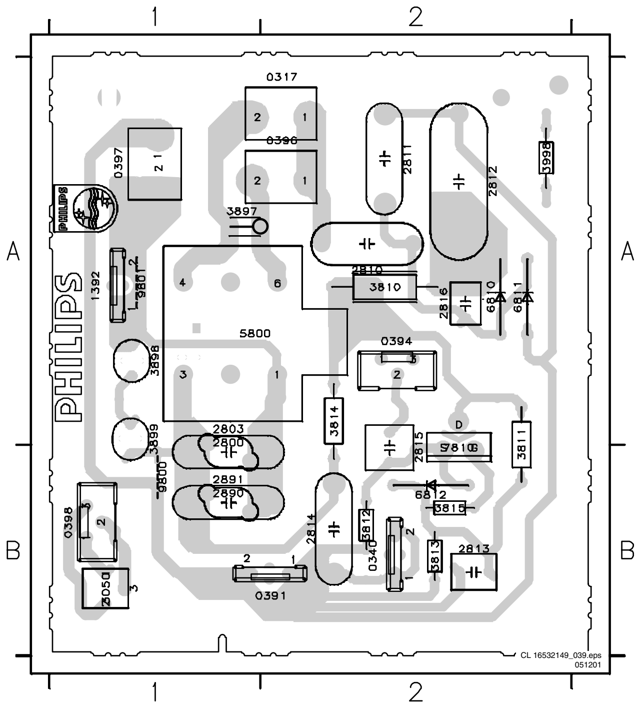
0393	B1
2030	B1
2031	B1
2032	B1
2033	B1
3030	A1
3031	B1
3032	B1
3040	A1
5030	A1
6030	B1
6033	B1
9030	B1
9031	B1

DAF Panel

0317	B1
0340	C4
0391	B4
0394	E1
0396	A1
0397	A4
0398	D1
1392	A4
2800	B2
2803	B3
2810	C1
2811	E1
2812	E2
2813	E3
2814	E4
2815	E3
2816	C2
2890	B3
2891	B3
3050	C1
3810	C3
3811	D3
3812	E4
3813	E2
3814	D4
3815	D3
3897	B1
3898	A4
3899	B4
3998	C3
5800	A2
6810	C2
6811	E1
6812	D3
7810	D4
9800	B4
9801	A4


I DAF PANEL I
1 2 3 4
A B C D E
TO
PICTURE
TUBE
0396
1392
N.C.
9801
0397
TO DAF-BLOCK
5800
6 3 4 1
RES
3897
1R
3898
3899
2800 390p
2803 RES 390p
2890 390p
2891 RES 390p
TO 0317
0317
A 1
9800
0391
TO 0391
A 1
0340
TO EHT-CAP
I1
I2
50 V / div DC
10µs / div
10 V / div DC
10µs / div
2810
1n5
3050
10K
EH-HR
0398
G
TO 0395
DC SHIFT
ADJUSTABLE
2816
220p
6810
BYD33M
3810
470K
I1
3811
4M7
3814
100K
7810
STP3NB80
I2
3815
1K
6812
BZX79-C22
2811 1n
6811 BYD33M
2812 10n
3813 470K
2813 470n
3812 33K
2814 1n
FROM
0394
OF
A 1
0394
2815
1u
CL 16532149_009.eps
171201

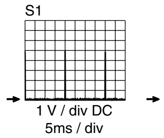
Layout DAF Panel

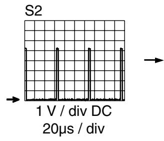

1 2
A B
0317
0396
0397
PHILIPS
2811
2812
3998
3897
1392
9801
2810
3810
2816
6810
6811
5800
0394
3898
3899
9800
3814
2803
2800
2891
2890
2815
7810
3811
6812
3815
2814
6813
0340
3813
2813
0398
3050
0391
CL 16532149_039.eps
051201

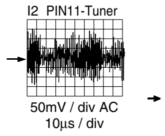
0317	A2
0340	B2
0391	B2
0394	A2
0396	A2
0397	A1
0398	B1
1392	A1
2800	A2
2803	A1
2810	A2
2811	A2
2812	A2
2813	B2
2814	B2
2815	A2
2816	A2
2890	B2
2891	B1
3050	B1
3810	A2
3811	A2
3812	B2
3813	B2
3814	A2
3815	B2
3897	A1
3898	A1
3899	A1
3998	A1
5800	A2
6810	A2
6811	A2
6812	B2
7810	A2
9800	B1
9801	A1

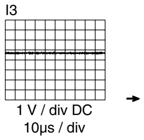
Small Signal Board: Tuner, IF, Source Selection and Video Processing

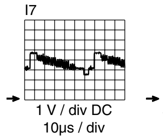
0310 H2
1101 D3
1102 B3
1104 E6
1105 F6
1106 E7
1107 E8
1108 D6
1109 B6
1525 E14
1526 E14
1527 E15
1528 E15
2101 A4
2102 B4
2104 B4
2105 B5
2106 C4
2107 C4
2108 D4
2109 C8
2110 C9
2111 C8
2112 A10
2116 B2
2117 D9
2118 D8
2119 A10
2120 A3
2121 A3
2122 D9
2125 B2
2127 A4
2501 F9
2502 F10
2503 F10
2504 F10
2505 F10
2506 F10
2510 C13
2511 C13
2512 C13
2520 E13
2521 F14
2522 E14
2525 E14
2526 E14
2527 E15
2528 E15
2532 A13
2533 B10
2534 A13
2535 B10
2536 B10
2537 B10
2538 A7
2539 A7
2540 B8
2541 B8
2545 F9
2550 G12
2551 H15
2552 H15
2553 F15
2554 F11
2555 G11
2556 H11
2557 G12
2558 I12
2559 I12
2560 F12
2561 F12
2562 I14
2563 I13
2564 I14
2565 F11
2566 F9
2567 G12
2569 H3
2570 H11
2788 H4
3102 A2
3103 B2
3104 B1
3106 C4
3107 D5
3109 E4
3110 F4
3111 F5
3112 G5
3113 G4
3114 G5
3115 G5
3116 F4
3117 F5
3118 C9
3119 D7
3121 G7
3122 G6
3123 G6
3124 B7
3133 B5
3134 D5
3135 G8
3136 D8
3137 D9
3138 E8
3139 E8
3140 B1
3141 B1
3142 B10
3143 A10
3145 F8
3146 A2
3148 E7
3149 F7
3152 B9
3153 B9
3154 A2
3155 A2
3521 E14
3530 B11
3531 B12
3532 A13
3538 A8
3545 F9
3546 G9
3551 G14
3552 G15
3553 G15
3554 F15
3556 H14
3557 G12
3558 H12
3560 F9
3565 G10
3566 G10
3567 E11
3568 F11
3569 F11
3571 D14
3590 G15
3999 A6
4101 E4
4102 E8
4103 B9
4104 B3
4105 G6
4107 G7
4108 G7
4109 G8
4110 E7
4111 G7
4112 B1
4113 F7
4114 A3
4803 I9
4804 H10
4809 G14
5101 A4
5102 B4
5103 D4
5104 D5
5105 E7
5106 E8
5108 C8
5109 C2
5501 A8
5502 A8
5540 G10
5553 H15
5559 I12
5560 F13
5562 I12
6101 B4
6102 E4
6103 F4
6104 F4
6105 C5
6106 A2
6107 A2
7101 D5
7102 E5
7103 G5
7104 G4
7105 G6
7106 G7
7107 F8
7108 F7
7109 E7
7111 D9
7112 A9
7113 A2
7501 D11
7502 E9
7555 G15
7560 F12
7561 F11

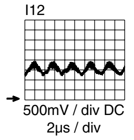

S1
1 V / div DC
5ms / div

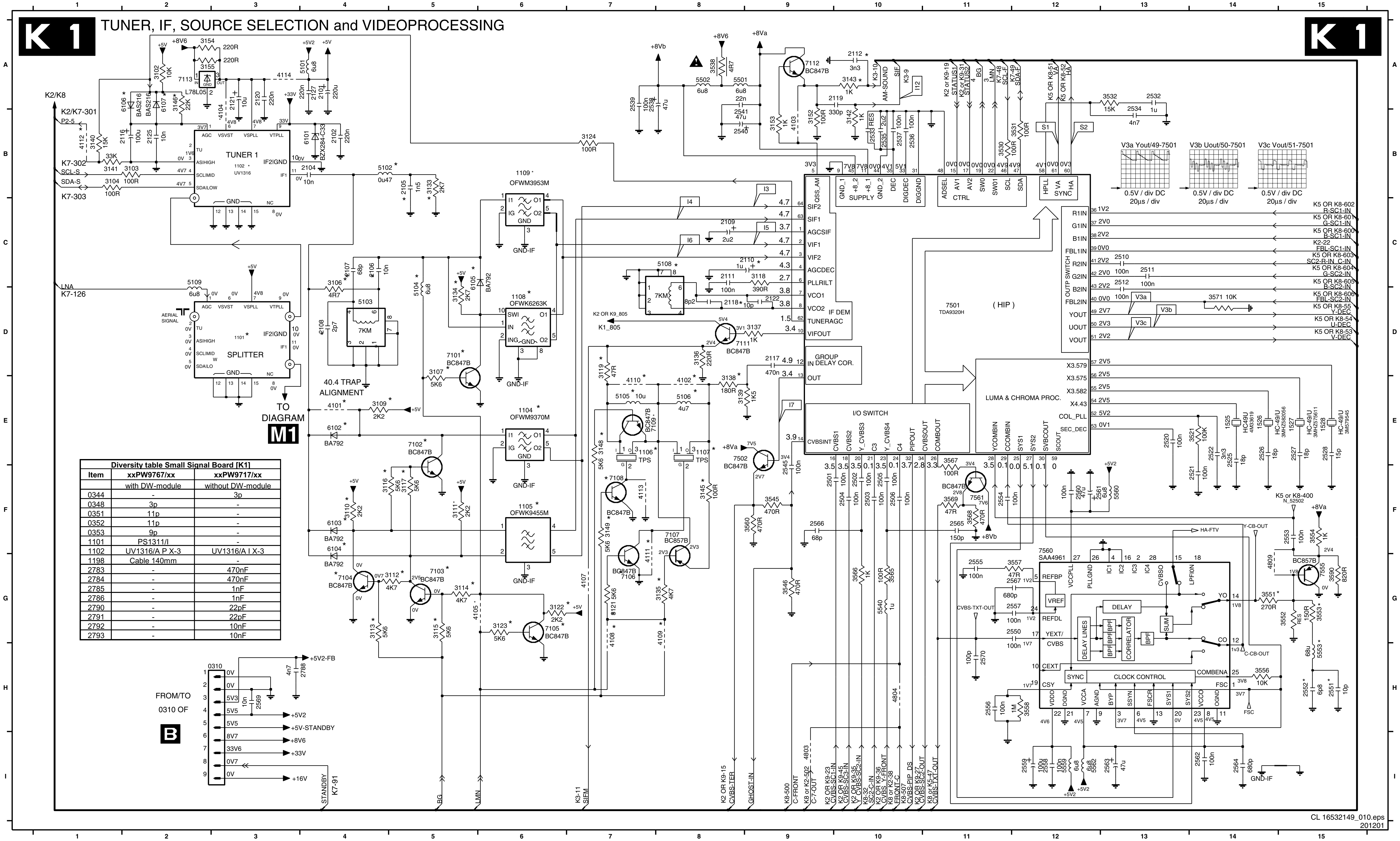

S2
1 V / div DC
20µs / div


I2 PIN11-Tuner
50mV / div AC
10µs / div


I3
1 V / div DC
10µs / div


I7
1 V / div DC
10µs / div

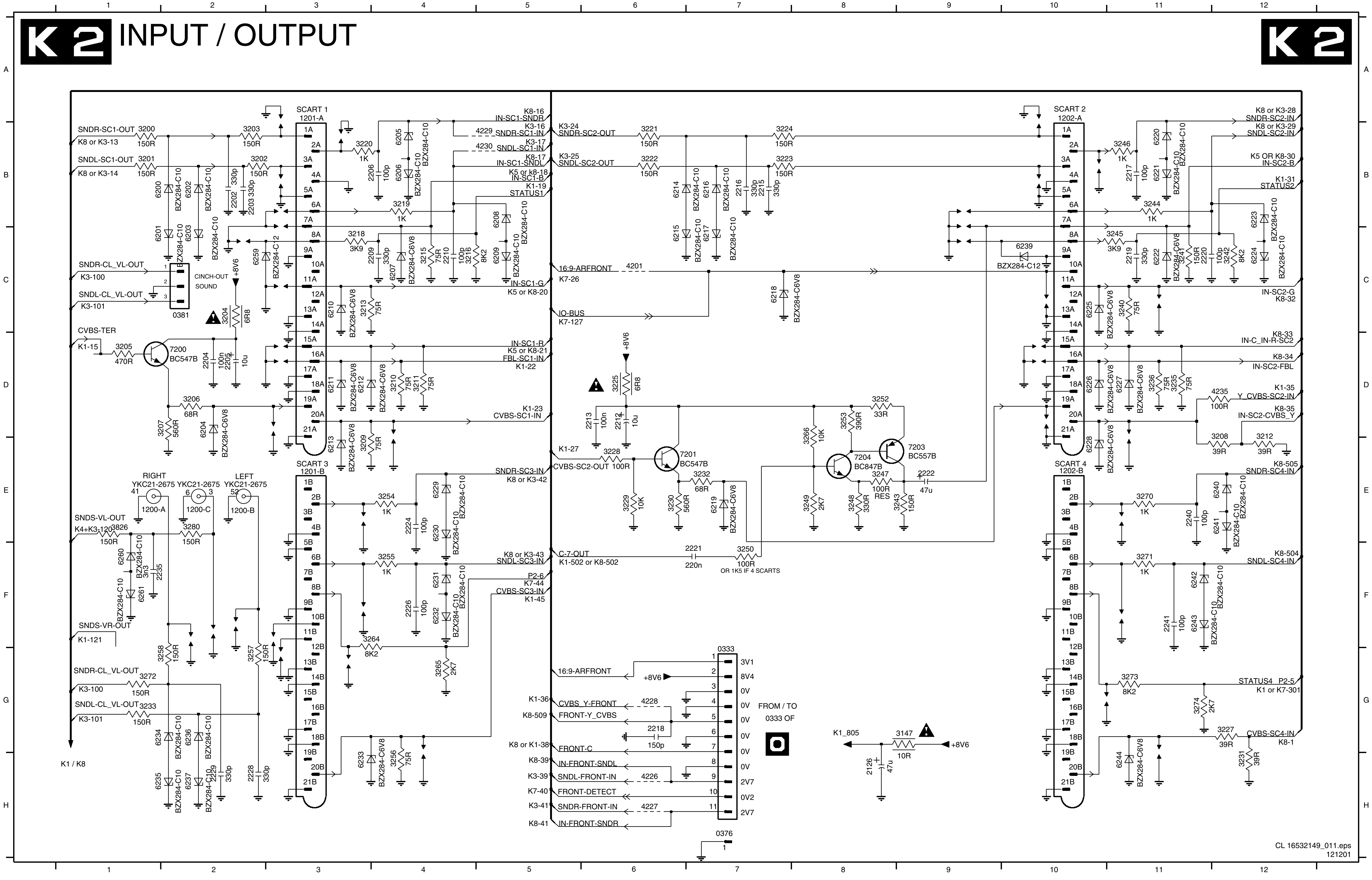

I12
500mV / div DC
2µs / div


1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
A B C D E F G H I
K 1
TUNER, IF, SOURCE SELECTION and VIDEOPROCESSING
K2/K8
K2/K7-301
P2-5
K7-302
SCL-S
SDA-S
K7-303
TUNER 1
1102
UV1316
AGC VSVST VSPLL VTPLL
TU
ASIHIGH
SCLIMID
SDAILOW
IF2|GND
IF1
GND
NC
7113 L78L05
LNA
K7-126
AERIAL SIGNAL
SPLITTER
1101
TO DIAGRAM M1
40.4 TRAP ALIGNMENT
1109 OFWM3953M
1108 OFWK6263K
1104 OFWM9370M
1105 OFWK9455M
GND-IF
5103 7KM
5108 7KM
K2 OR K9_805
K1_805
7101 BC847B
7102 BC847B
7103 BC847B
7104 BC847B
7105 BC847B
7106 BC847B
7107 BC857B
7108 BC847B
7109 BC847B
7111 BC847B
7112 BC847B
7502 BC847B
7561 BC847B
7555 BC857B
FROM/TO 0310 OF
B
0V 0V 5V3 5V5 5V5 8V7 33V6 0V7 0V
+5V2-FB
+5V2
+5V-STANDBY
+8V6
+33V
+16V
STANDBY K7-91
RG
LMN
K8-11 SIFM
K2 OR K9-15 CVBS-TER
GHOST-IN
K8-500 C-FRONT
K8 or K2-502 C-7-OUT
K2 OR K9-23 CVBS-SC1-IN
K2 OR K9-45 CVBS-SC2-IN
K8-32 SC2-C-IN
K2 OR K2-36 CVBS-FRONT
K8 or K2-38 FRONT-C
K8-507 CVBS-PIP_DS
K2 OR K2-47 CVBS-PIP-OUT
K8 or K5-47 CVBS-TXT-OUT
7501 TDA9320H
(HIP)
SUPPLY
IF DEM
GROUP DELAY COR.
I/O SWITCH
LUMA & CHROMA PROC.
OUTP SWITCH
OSS_AM
SIF2 SIF1 AGCSIF VIF1 VIF2 AGCDEC PLLRILT VCO1 VCO2 TUNERAGC VIFOUT
IN OUT
CVBSINT CVBS2 CVBS1 Y_CVBS3 C3 Y_CVBS4 C4 PIPOUT CVBSOUT COMBOUT
YCOMBIN CCOMBIN SYS1 SYS2 SVBCOUT SCOUT
X3.579 X3.575 X3.582 X4.43 COL_PLL SEC_DEC
R1IN G1IN B1IN FBL1IN R2IN G2IN B2IN FBL2IN YOUT UOUT VOUT
ADSEL AV1 AV2 SW0 SW01 SCL SDA
HPLL VA HA SYNC
CTRL
K2 or K9-19 STATUS1
K2 or K9-31 STATUS2
K3-10 AM-SOUND
SIF K3-9
K7-48 SCL-F
K7-49 SDA-F
K5 OR K8-51 VA
K5 OR K8-52 HA
K5 OR K8-602 R-SC1-IN
K5 OR K8-601 G-SC1-IN
K5 OR K8-600 B-SC1-IN
K2-22 FBL-SC1-IN
K5 OR K8-603 SC2-R-IN_C-IN
K5 OR K8-604 G-SC2-IN
K5 OR K8-605 B-SC2-IN
K5 OR K8-606 FBL-SC2-IN
K5 OR K8-55 Y-DEC
K5 OR K8-54 U-DEC
K5 OR K8-53 V-DEC
K5 or K8-400 N_52502
V3a Yout/49-7501
V3b Uout/50-7501
V3c Vout/51-7501
0.5V / div DC 20µs / div
7560 SAA4961
REFBP REFDL YEXT/ CVBS CEXT CSY
VREF DELAY DELAY LINES BPF CORRELATOR SUM SYNC CLOCK CONTROL
VDDD DGND VCCA AGND BYP SSYN FSCR SYS1 SYS2 VCCO OGND FSC
YO CO COMBENA
HA-FTV
Y-CB-OUT
C-CB-OUT
CVBS-TXT-OUT
GND-IF
HC-49U 4M43619
HC-49/U 3M579545
CL 16532149_010.eps 201201

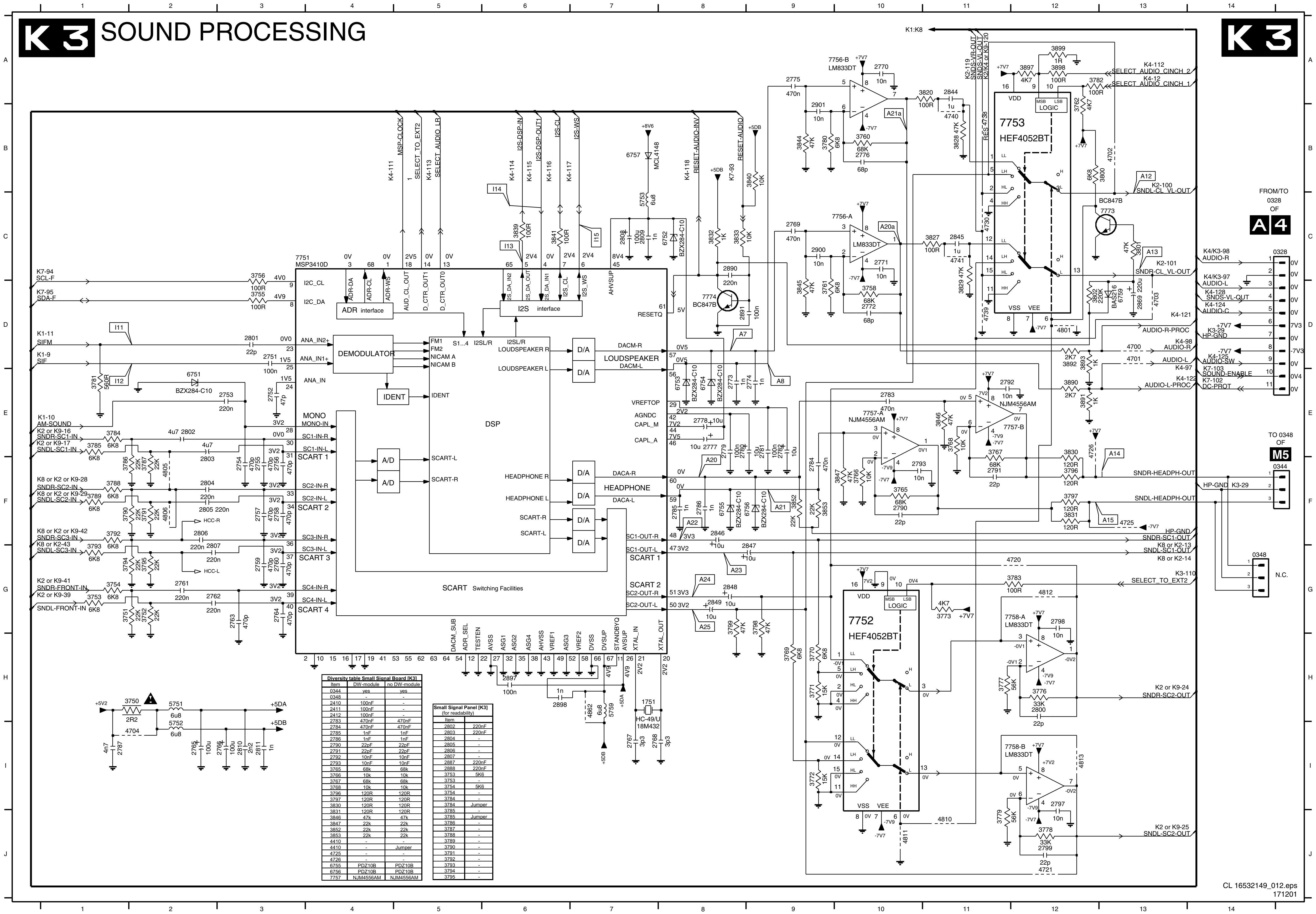
Diversity table Small Signal Board [K1]		
Item	**xxPW9767/xx**	**xxPW9717/xx**
	with DW-module	without DW-module
0344	-	3p
0348	3p	-
0351	11p	-
0352	11p	-
0353	9p	-
1101	PS1311/I	-
1102	UV1316/A P X-3	UV1316/A I X-3
1198	Cable 140mm	-
2783	-	470nF
2784	-	470nF
2785	-	1nF
2786	-	1nF
2790	-	22pF
2791	-	22pF
2792	-	10nF
2793	-	10nF

Small Signal Board: Input / Output

0333 F7	2126 H8	2215 B7	2228 H2	3204 C2	3215 C4	3227 G12	3241 C11	3252 F8	3270 E11	4228 G6	6206 B4	6216 B7	6226 D10	6236 G2	6261 F1
0376 H8	2202 B2	2216 B7	2229 H2	3205 D1	3216 C4	3228 E6	3242 C12	3253 F8	3271 F11	4229 B5	6207 C4	6217 C7	6227 D11	6237 H2	7200 D2
0381 C2	2203 B2	2217 B11	2235 F1	3206 D2	3218 C3	3229 F6	3243 F9	3254 E4	3272 G1	4230 B5	6208 B5	6218 C7	6228 E10	6239 C10	7201 E6
1200-A E1	2204 D2	2218 G6	2240 E11	3207 D2	3219 B4	3230 F6	3244 B11	3255 F4	3273 G11	4235 D12	6209 C5	6219 D7	6229 E4	6240 E12	7203 F9
1200-B E2	2205 D2	2219 C11	2241 F11	3208 E12	3220 B3	3231 H12	3245 C11	3256 H4	3274 G11	6200 B1	6210 C3	6220 B11	6230 E4	6241 E12	7204 F8
1200-C E2	2206 B4	2220 C11	3147 G9	3209 E3	3221 B6	3232 E7	3246 B11	3257 G2	3280 E2	6201 C1	6211 D3	6221 B11	6231 F4	6242 F11	
1201-A A3	2209 C4	2221 F7	3200 B1	3210 D4	3222 B6	3233 G1	3247 F8	3258 G2	3826 E1	6202 B2	6212 D3	6222 C11	6232 F4	6243 F11	
1201-B E3	2210 C4	2222 F9	3201 B1	3211 D4	3223 B7	3235 D11	3248 F8	3264 F4	4201 C6	6203 C2	6213 E3	6223 B12	6233 H3	6244 H11	
1202-A A10	2212 E6	2224 E4	3202 B2	3212 E12	3224 B7	3236 D11	3249 F8	3265 G4	4226 H6	6204 D2	6214 B6	6224 C12	6234 G1	6259 C2	
1202-B E10	2213 E6	2226 F4	3203 B2	3213 C3	3225 D6	3240 C11	3250 F7	3266 F8	4227 H6	6205 B4	6215 C6	6225 C10	6235 H1	6260 F1	


K2
INPUT / OUTPUT
1 2 3 4 5 6 7 8 9 10 11 12
A B C D E F G H
SCART 1
1201-A
SCART 3
1201-B
SCART 2
1202-A
SCART 4
1202-B
SNDR-SC1-OUT
K8 or K3-13
SNDL-SC1-OUT
K8 or K3-14
SNDR-CL_VL-OUT
K3-100
SNDL-CL_VL-OUT
K3-101
CINCH-OUT SOUND
0381
CVBS-TER
K1-15
7200 BC547B
K8-16 IN-SC1-SNDR
K3-16 SNDR-SC1-IN
K3-17 SNDL-SC1-IN
K8-17 IN-SC1-SNDL
K5 or K8-18 IN-SC1-B
K1-19 STATUS1
IN-SC1-G K5 or K8-20
IN-SC1-R K5 or K8-21
FBL-SC1-IN K1-22
K1-23 CVBS-SC1-IN
SNDR-SC3-IN K8 or K3-42
K8 or K3-43 SNDL-SC3-IN
P2-6 K7-44
CVBS-SC3-IN K1-45
RIGHT YKC21-2675 1200-A
YKC21-2675 1200-C
LEFT YKC21-2675 1200-B
SNDS-VL-OUT K4+K3-120
SNDS-VR-OUT K1-121
SNDR-CL_VL-OUT K3-100
SNDL-CL_VL-OUT K3-101
K1 / K8
K3-24 SNDR-SC2-OUT
K3-25 SNDL-SC2-OUT
16:9-ARFRONT K7-26
IO-BUS K7-127
K1-27 CVBS-SC2-OUT
7201 BC547B
7204 BC847B
7203 BC557B
C-7-OUT K1-502 or K8-502
OR 1K5 IF 4 SCARTS
0333
16:9-ARFRONT
K1-36 CVBS_Y-FRONT
K8-509 FRONT-Y_CVBS
K8 or K1-38 FRONT-C
K8-39 IN-FRONT-SNDL
K3-39 SNDL-FRONT-IN
K7-40 FRONT-DETECT
K3-41 SNDR-FRONT-IN
K8-41 IN-FRONT-SNDR
3V1 8V4 0V 0V 0V 0V 0V 0V 2V7 0V2 2V7
FROM / TO 0333 OF
0376
K1_805
+8V6
K8 or K3-28 SNDR-SC2-IN
K8 or K3-29 SNDL-SC2-IN
K5 OR K8-30 IN-SC2-B
K1-31 STATUS2
IN-SC2-G K8-32
K8-33 IN-C_IN-R-SC2
K8-34 IN-SC2-FBL
K1-35 Y_CVBS-SC2-IN
K8-35 IN-SC2-CVBS_Y
K8-505 SNDR-SC4-IN
K8-504 SNDL-SC4-IN
STATUS4 P2-5 K1 or K7-301
CVBS-SC4-IN K8-1
CL 16532149_011.eps
121201

Small Signal Board: Sound Processing

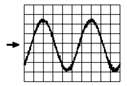

K 3
SOUND PROCESSING
K 3
A4
FROM/TO 0328 OF
M5
TO 0348 OF
0344
7751 MSP3410D
ADR interface
I2S interface
DEMODULATOR
IDENT
DSP
D/A
LOUDSPEAKER
HEADPHONE
SCART 1
SCART 2
SCART 3
SCART 4
A/D
MONO
SCART Switching Facilities
7753 HEF4052BT
7752 HEF4052BT
VDD
VSS
VEE
MSB LSB LOGIC
7756-A LM833DT
7756-B LM833DT
7757-A NJM4556AM
7757-B
7758-A LM833DT
7758-B LM833DT
7773 BC847B
7774 BC847B
K7-94 SCL-F
K7-95 SDA-F
K1-11 SIFM
K1-9 SIF
K1-10 AM-SOUND
K2 or K9-16 SNDR-SC1-IN
K2 or K9-17 SNDL-SC1-IN
K8 or K2 or K9-28 SNDR-SC2-IN
K8 or K2 or K9-29 SNDL-SC2-IN
K8 or K2 or K9-42 SNDR-SC3-IN
K8 or K2-43 SNDL-SC3-IN
K2 or K9-41 SNDR-FRONT-IN
K2 or K9-39 SNDL-FRONT-IN
K4-111 MSP-CLOCK
SELECT_TO_EXT2
K4-113 SELECT_AUDIO_LR
K4-114 I2S-DSP-IN
K4-115 I2S-DSP-OUT1
K4-116 I2S-CL
K4-117 I2S-WS
K4-118 RESET-AUDIO-INV
K7-93 RESET-AUDIO
K1:K8
K4-112 SELECT_AUDIO_CINCH_2
K4-12 SELECT_AUDIO_CINCH_1
K2-100 SNDL-CL_VL-OUT
K2-101 SNDR-CL_VL-OUT
K4-128 SNDS-VL-OUT
K4-124 AUDIO-C
K4-121 AUDIO-R-PROC
K3-29 HP-GND
K4-98 AUDIO-R
K4-126 AUDIO-SW
K4-97 AUDIO-L
K7-103 SOUND-ENABLE
K4-122 AUDIO-L-PROC
K7-102 DC-PROT
SNDR-HEADPH-OUT
SNDL-HEADPH-OUT
HP-GND K3-29
HP-GND
SNDR-SC1-OUT
K8 or K2-13 SNDL-SC1-OUT
K8 or K2-14
K3-110 SELECT_TO_EXT2
K2 or K9-24 SNDR-SC2-OUT
K2 or K9-25 SNDL-SC2-OUT
N.C.
+5V2
+5DA
+5DB
5751 6u8
5752 6u8
3750 2R2
4704
1751 HC-49/U 18M432
BZX284-C10
CL 16532149_012.eps
171201

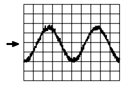
Diversity table Small Signal Board [K3]		
Item	DW-module	no DW-module
0344	yes	yes
0348	-	-
2410	100nF	-
2411	100nF	-
2412	100nF	-
2783	470nF	470nF
2784	470nF	470nF
2785	1nF	1nF
2786	1nF	1nF
2790	22pF	22pF
2791	22pF	22pF
2792	10nF	10nF
2793	10nF	10nF
3765	68k	68k
3766	10k	10k
3767	68k	68k
3768	10k	10k
3796	120R	120R
3797	120R	120R
3830	120R	120R
3831	120R	120R
3846	47k	47k
3847	22k	22k
3852	22k	22k
3853	22k	22k
4410	-	-
4410	-	Jumper
4725	-	-
4726	-	-
6755	PDZ10B	PDZ10B
6756	PDZ10B	PDZ10B
7757	NJM4556AM	NJM4556AM

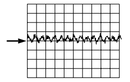
Small Signal Panel [K3] (for readability)	
Item	
2802	220nF
2803	220nF
2804	-
2805	-
2806	-
2807	-
2887	220nF
2888	220nF
3753	5K6
3753	-
3754	5K6
3754	-
3784	-
3784	Jumper
3785	-
3785	Jumper
3786	-
3787	-
3788	-
3789	-
3790	-
3791	-
3792	-
3793	-
3794	-
3795	-

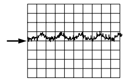
0328	C14
0344	F14
0348	G14
1751	H7
2751	D3
2752	E3
2753	E3
2754	F3
2755	F3
2756	F3
2757	F3
2758	F3
2759	G3
2760	G3
2761	G2
2762	G2
2763	G3
2764	G3
2765	I2
2766	I3
2767	I7
2768	I7
2769	C9
2770	A10
2771	C10
2772	D10
2773	E8
2774	E9
2775	A9
2776	B10
2777	E8
2778	E8
2779	E8
2780	E8
2781	E9
2782	E9
2783	E10
2784	F9
2785	F8
2786	F8
2787	I1
2790	F10
2791	F11
2792	E11
2793	F10
2797	I12
2798	G12
2799	J12
2800	H12
2801	D3
2802	E2
2803	E2
2804	F2
2805	F2
2806	F2
2807	G2
2808	C7
2809	C7
2810	I3
2811	I3
2844	A11
2845	C11
2846	F8
2847	F9
2848	G8
2849	G8
2869	D13
2890	C8
2891	D8
2897	H6
2898	H6
2900	C9
2901	B9
3750	H2
3751	G1
3752	G2
3753	G1
3754	G1
3755	D3
3756	C3
3758	D10
3760	B10
3761	D9
3762	B12
3765	F10
3766	F10
3767	E11
3768	E11
3769	H9
3770	H9
3771	H9
3772	I9
3773	G11
3776	H12
3777	H11
3778	J12
3779	J11
3780	B9
3781	E1
3782	A12
3783	G11
3784	E1
3785	E1
3786	F1
3787	F2
3788	F1
3789	F1
3790	F1
3791	F2
3792	F1
3793	G1
3794	G1
3795	G2
3796	F12
3797	F12
3798	G9
3799	G8
3800	B13
3801	C13
3802	D12
3820	A11
3827	C11
3828	B11
3829	D11
3830	E12
3831	F12
3832	C8
3833	C8
3839	C6
3840	B9
3841	C6
3844	B9
3845	D9
3846	E11
3847	F10
3852	F9
3853	F9
3890	E12
3891	E12
3892	D12
3893	D12
3897	A12
3898	A12
3899	A12
4700	D13
4701	D13
4702	B13
4703	D13
4704	I2
4720	G11
4721	J12
4725	F13
4726	E12
4730	C11
4738	B11
4739	D11
4740	B11
4741	C11
4801	D12
4805	F2
4806	F2
4810	J11
4811	J10
4812	G12
4813	I12
4862	H7
5751	H2
5752	I2
5753	C7
5759	H7
6751	E2
6752	C8
6753	E8
6754	E8
6755	F8
6756	F9
6757	B7
6759	D13
7751	C3
7752	G10
7753	B11
7756-A	C9
7756-B	A9
7757-A	E10
7757-B	E12
7758-A	G11
7758-B	I11
7773	C13
7774	D8

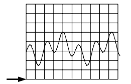
Small Signal Panel [K3+K4]		
Item	wired dolby	wireless dolby
2769	470nF	470nF
2770	10nF	-
2771	10nF	-
2772	22pF	-
2773	1nF	-
2774	1nF	-
2775	470nF	470nF
2776	22pF	-
2813	10nF	-
2814	10nF	-
2815	10nF	-
2816	100 F	-
2817	10nF	-
2818	100 F	-
2819	100 F	-
2820	1nF	-
2821	10nF	-
2822	1nF	-
2824	100 F	-
2825	10nF	-
2826	22pF	-
2827	1nF	-
2828	10nF	-
2829	1nF	-
2830	10nF	-
2831	100 F	-
2832	22nF	-
2833	22nF	-
2836	47pF	-
2837	10nF	-
2838	22pF	-
2839	10nF	-
2840	10nF	-
2841	470nF	-
2844	1 F	-
2845	1 F	-
2892	470nF	-
2895	10nF	-
3758	47k	-
3760	47k	-
3761	6k8	-
3762	4k7	-
3780	6k8	-
3782	100R	-
3811	100R	-
3812	100R	-
3813	100R	-
3814	100R	-
3817	100k	-
3818	100R	-
3819	100R	-
3820	100R	-
3821	3k3	-
3822	33k	-
3823	4k7	-
3824	100R	-
3825	56k	-
3827	100R	-
3828	47k	-
3829	47k	-
3837	56k	-
3838	100R	-
3839	100R	-
3841	100R	-
3842	47k	-
3844	47k	-
3845	47k	-
3848	100R	-
3849	100R	-
3890	2k7	-
3891	1k	-
3892	2k7	-
3892	Jumper	-
3893	1k	-
3894	47k	-
3897	4k7	-
3898	100R	-
4700	Jumper	-
4701	Jumper	-
4702	Jumper	Jumper
4703	Jumper	Jumper
4730	Jumper	-
4739	Jumper	-
5754	6,8 H	-
5755	6,8 H	-
5756	6,8 H	-
6753	PDZ10B	-
6754	PDZ10B	PDZ10B
7750	LF33CV	-
7753	HEF4052BT	-
7756	LM833DR2	-
7770	SAA7712H/N203	-
7772	LM833DR2	-
7775	HEF4052BT	-

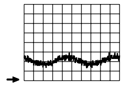
A7

200mV / div DC
200µs / div

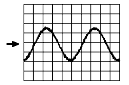
A8

200mV / div DC
200µs / div

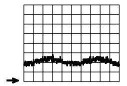
A14 HP-R/1-0344

50mV / div DC
0.5ms / div

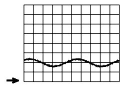
A15 HP-R/3-0344

50mV / div DC
0.5ms / div

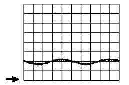
A15a

0.5V / div
0.2ms / div

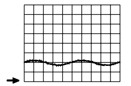
A20

1 V / div DC
200µs / div

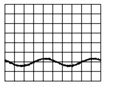
A20a

500mV / div DC
200µs / div

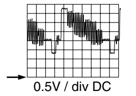
A21

1 V / div DC
200µs / div

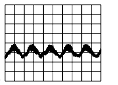
A22

2 V / div DC
200µs / div

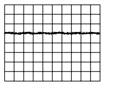
A23

2 V / div DC
200µs / div

A24

2 V / div DC
200µs / div

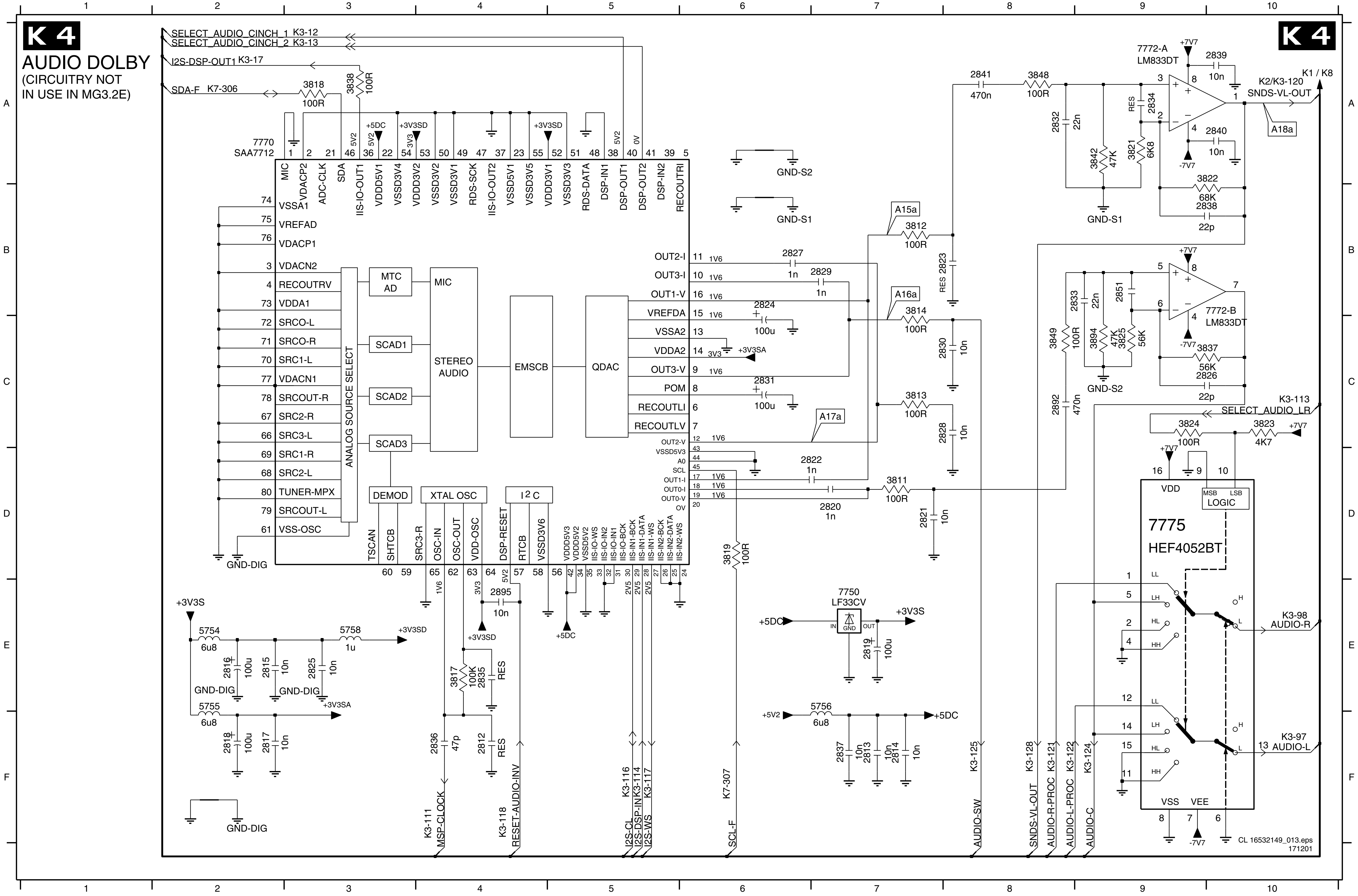
A25

2 V / div DC
200µs / div

I11 SIFM-E7111

0.5V / div DC
10µs / div

I12

500mV / div DC
2µs / div

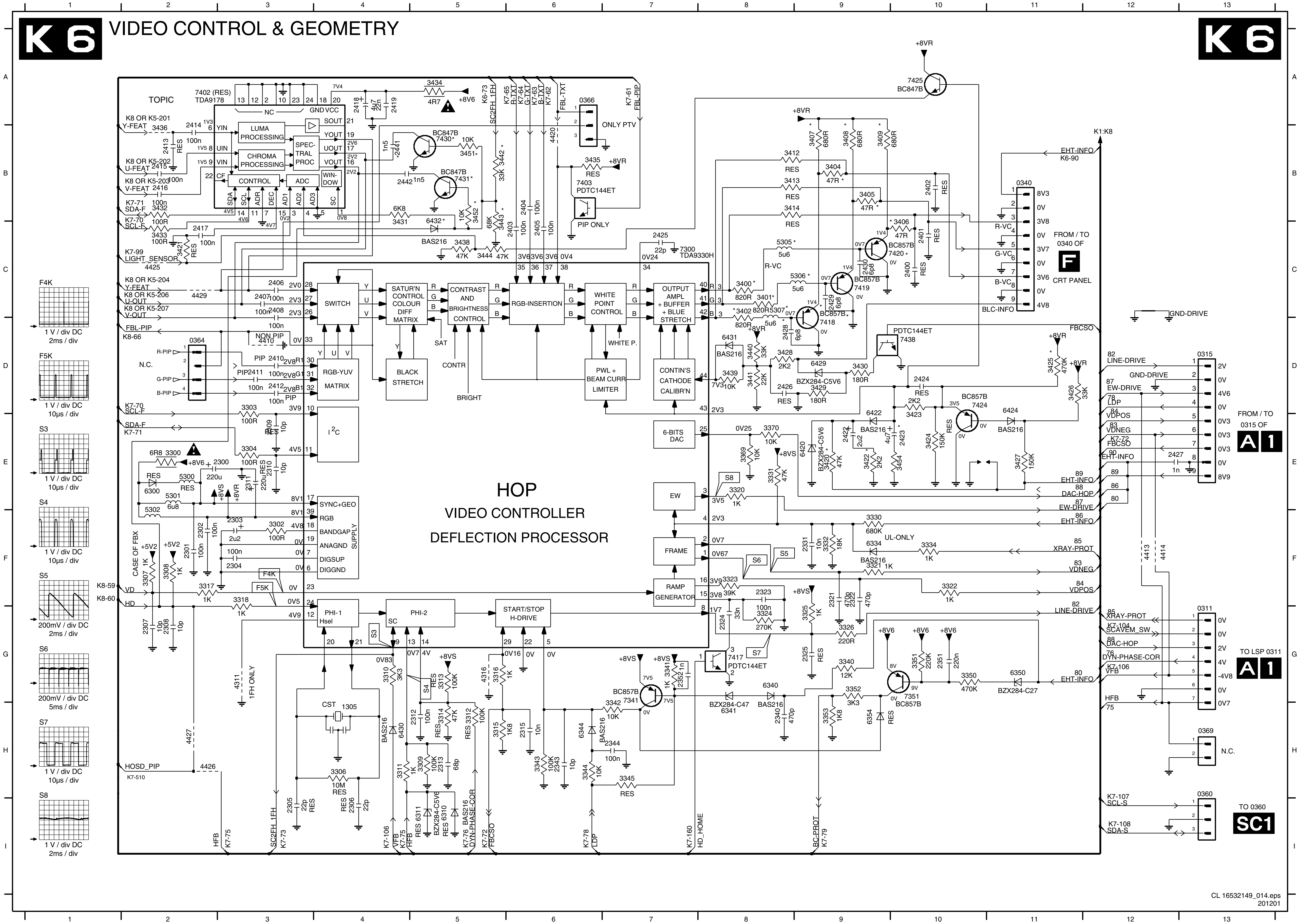
I14

1 V / div DC
500ns / div

Small Signal Board: Sound Processing


K 4
AUDIO DOLBY
(CIRCUITRY NOT
IN USE IN MG3.2E)
SELECT_AUDIO_CINCH_1 K3-12
SELECT_AUDIO_CINCH_2 K3-13
I2S-DSP-OUT1 K3-17
SDA-F K7-306
3818 100R
3838 100R
7770
SAA7712
MIC
VDACP2
ADC-CLK
SDA
IIS-IO-OUT1
VDDD5V1
VSSD3V4
VDDD3V2
VSSD3V2
VSSD3V1
RDS-SCK
IIS-IO-OUT2
VSSD5V1
VSSD3V5
VDDD3V1
VSSD3V3
RDS-DATA
DSP-IN1
DSP-OUT1
DSP-OUT2
DSP-IN2
RECOUTRI
VSSA1
VREFAD
VDACP1
VDACN2
RECOUTRV
VDDA1
SRCO-L
SRCO-R
SRC1-L
VDACN1
SRCOUT-R
SRC2-R
SRC3-L
SRC1-R
SRC2-L
TUNER-MPX
SRCOUT-L
VSS-OSC
ANALOG SOURCE SELECT
MTC AD
MIC
SCAD1
SCAD2
SCAD3
STEREO AUDIO
EMSCB
QDAC
DEMOD
XTAL OSC
I2C
OUT2-I
OUT3-I
OUT1-V
VREFDA
VSSA2
VDDA2
OUT3-V
POM
RECOUTLI
RECOUTLV
OUT2-V
VSSD5V3
A0
SCL
OUT1-I
OUT0-I
OUT0-V
OV
TSCAN
SHTCB
SRC3-R
OSC-IN
OSC-OUT
VDD-OSC
DSP-RESET
RTCB
VSSD3V6
VDDD5V3
VSSD5V2
IIS-IO-WS
IIS-IO-IN2
IIS-IO-IN1
IIS-IO-BCK
IIS-IN1-BCK
IIS-IN1-DATA
IIS-IN1-WS
IIS-IN2-BCK
IIS-IN2-DATA
IIS-IN2-WS
GND-DIG
GND-S2
GND-S1
+3V3S
+3V3SD
+3V3SA
+5DC
+5V2
5754 6u8
5758 1u
5755 6u8
5756 6u8
2816 100u
2815 10n
2825 10n
2818 100u
2817 10n
2895 10n
3817 100K
2835 RES
2836 47p
2812 RES
2827 1n
2829 1n
2824 100u
2831 100u
2822 1n
2820 1n
3811 100R
2821 10n
3819 100R
7750
LF33CV
IN GND OUT
2819 100u
2837 10n
2813 10n
2814 10n
A15a
A16a
A17a
A18a
3812 100R
3814 100R
3813 100R
2823 RES
2830 10n
2828 10n
2841 470n
3848 100R
2832 22n
3842 47K
3821 6K8
2834 RES
7772-A
LM833DT
+7V7
-7V7
2839 10n
2840 10n
3822 68K
2838 22p
K2/K3-120
SNDS-VL-OUT
K1 / K8
7772-B
LM833DT
2833 22n
2851
3894 47K
3825 56K
3849 100R
2892 470n
3837 56K
2826 22p
K3-113
SELECT_AUDIO_LR
3824 100R
3823 4K7
7775
HEF4052BT
VDD
MSB LSB
LOGIC
LL
LH
HL
HH
VSS VEE
K3-98
AUDIO-R
K3-97
AUDIO-L
K3-111
MSP-CLOCK
K3-118
RESET-AUDIO-INV
K3-116
K3-114
K3-117
I2S-CL
I2S-DSP-IN
I2S-WS
K7-307
SCL-F
K3-125
AUDIO-SW
K3-128
SNDS-VL-OUT
K3-121
AUDIO-R-PROC
K3-122
AUDIO-L-PROC
K3-124
AUDIO-C
CL 16532149_013.eps
171201

2812	F4
2813	F7
2814	F7
2815	E2
2816	E2
2817	F2
2818	F2
2819	E7
2820	D7
2821	D7
2822	D7
2823	B8
2824	B6
2825	E3
2826	C10
2827	B6
2828	C8
2829	B7
2830	C8
2831	C6
2832	A8
2833	B9
2834	A9
2835	E4
2836	F4
2837	F7
2838	B10
2839	A10
2840	A10
2841	A8
2851	B9
2892	C8
2895	E4
3811	D7
3812	B7
3813	C7
3814	B7
3817	E4
3818	A3
3819	D6
3821	A9
3822	A10
3823	C10
3824	C9
3825	C9
3837	C10
3838	A3
3842	A9
3848	A8
3849	C8
3894	C9
5754	E2
5755	E2
5756	E7
5758	E3
7750	E7
7770	A2
7772-A	A9
7772-B	B9
7775	D9

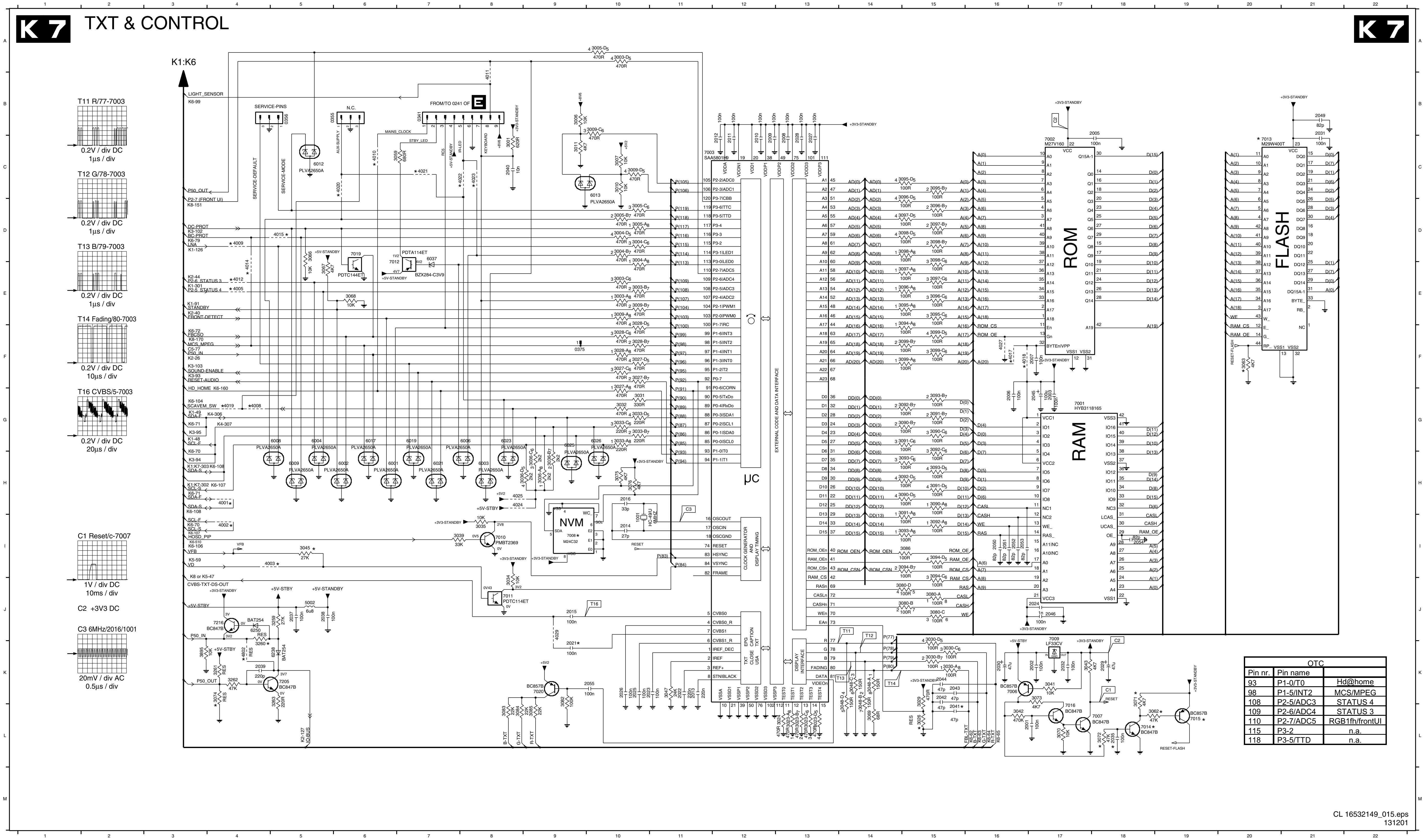
Small Signal Board: Video Control and Geometry


K 6
VIDEO CONTROL & GEOMETRY
K 6
1 2 3 4 5 6 7 8 9 10 11 12 13
A B C D E F G H I
TOPIC
7402 (RES) TDA9178
LUMA PROCESSING
CHROMA PROCESSING
SPEC-TRAL PROC
CONTROL
ADC
WIN-DOW
SOUT YOUT UOUT VOUT
NC GND VCC
SDA SCL ADR DEC AD1 AD2 AD3 SC
K8 OR K5-201 Y-FEAT
K8 OR K5-202 U-FEAT
K8 OR K5-203 V-FEAT
K7-71 SDA-F
K7-70 SCL-F
K7-99 LIGHT_SENSOR
K8 OR K5-204 Y-FEAT
K8 OR K5-206 U-OUT
K8 OR K5-207 V-OUT
FBL-PIP
K8-66
N.C.
R-PIP G-PIP B-PIP
0364
K7-70 SCL-F
SDA-F K7-71
K8-59 VD
K8-60 HD
HOSD_PIP K7-510
CASE OF FBX
+5V2
7430 BC847B
7431 BC847B
7403 PDTC144ET
PIP ONLY
0366 ONLY PTV
K6-73 SC2FH_1FH
K7-65 R-TXT
K7-64 G-TXT
K7-63 B-TXT
K7-62 FBL-TXT
K7-61 FBL-PIP
7300 TDA9330H
SWITCH
SATUR'N CONTROL COLOUR DIFF MATRIX
CONTRAST AND BRIGHTNESS CONTROL
RGB-INSERTION
WHITE POINT CONTROL
OUTPUT AMPL + BUFFER + BLUE STRETCH
RGB-YUV MATRIX
BLACK STRETCH
PWL + BEAM CURR LIMITER
CONTIN'S CATHODE CALIBR'N
SAT CONTR BRIGHT WHITE P.
I²C
6-BITS DAC
EW
FRAME
RAMP GENERATOR
SYNC+GEO RGB BANDGAP ANAGND DIGSUP DIGGND SUPPLY
PHI-1 Hsel
PHI-2 SC
START/STOP H-DRIVE
HOP
VIDEO CONTROLLER
DEFLECTION PROCESSOR
CST 1305
7425 BC847B
+8VR
7420 BC857B
7419 BC857B
7418 BC857B
7438 PDTC144ET
7424 BC857B
7417 PDTC144ET
7341 BC857B
7351 BC857B
R-VC G-VC B-VC
K1:K8
EHT-INFO K6-90
0340
8V3 0V 3V8 0V 3V7 0V 3V6 0V 4V8
R-VC G-VC B-VC BLC-INFO
FROM / TO 0340 OF
F
CRT PANEL
GND-DRIVE
FBCSO
0315
82 LINE-DRIVE
GND-DRIVE
87 EW-DRIVE
78 LDP
84 VDPOS
83 VDNEG
K7-72 FBCSO
90 EHT-INFO
2V 0V 4V6 0V 0V3 0V3 0V3 0V 8V9
FROM / TO 0315 OF
A 1
89 EHT-INFO
88 DAC-HOP
87 EW-DRIVE
86 EHT-INFO
85 XRAY-PROT
83 VDNEG
84 VDPOS
82 LINE-DRIVE
UL-ONLY
0311
85 XRAY-PROT
K7-104 SCAVEM_SW
88 DAC-HOP
76 DYN-PHASE-COR
K7-106 VFB
HFB 75
80 EHT-INFO
0V 0V 2V 4V -4V8 0V 0V7
TO LSP 0311
A 1
0369 N.C.
0360
K7-107 SCL-S
K7-108 SDA-S
TO 0360
SC1
HFB K7-75
SC2FH_1FH K7-73
K7-106 VFB
K7-75 HFB
K7-76 DYN-PHASE-COR
K7-72 FBCSO
K7-78 LDP
K7-160 HD_HOME
BC-PROT K7-79
F4K 1 V / div DC 2ms / div
F5K 1 V / div DC 10µs / div
S3 1 V / div DC 10µs / div
S4 1 V / div DC 10µs / div
S5 200mV / div DC 2ms / div
S6 200mV / div DC 5ms / div
S7 1 V / div DC 10µs / div
S8 1 V / div DC 2ms / div
CL 16532149_014.eps
201201

0311	G13
0315	D13
0340	B11
0360	H13
0364	D2
0366	A6
0369	H13
1305	H4
2300	E3
2301	F2
2302	F2
2303	F3
2304	F3
2305	I3
2306	I4
2307	G2
2308	G2
2309	E3
2310	E3
2311	E3
2312	H5
2313	H5
2315	H6
2321	F9
2322	F9
2323	F8
2324	G8
2325	G9
2331	F9
2340	H8
2343	H6
2344	H7
2351	G10
2352	G7
2400	C10
2401	C10
2402	B10
2403	C6
2404	B6
2405	C6
2406	C3
2407	C3
2408	C3
2410	D3
2411	D3
2412	D3
2413	B2
2414	B2
2415	B2
2416	B2
2417	C2
2418	A4
2419	A4
2422	E9
2423	E10
2424	D10
2425	C7
2426	D8
2427	E12
2428	D8
2429	C9
2430	C9
2441	B4
2442	B4
3300	E2
3302	F3
3303	D3
3304	E3
3306	H4
3307	F2
3308	F2
3309	H5
3310	G4
3311	H4
3312	H5
3313	G5
3314	H5
3315	H5
3316	G5
3317	F2
3318	F3
3320	E8
3321	F9
3322	F10
3323	F8
3324	G8
3325	G9
3326	G9
3330	F9
3331	E8
3332	F9
3334	F10
3340	G9
3341	G7
3342	H7
3343	H6
3344	H6
3345	H7
3350	G10
3351	G10
3352	G9
3353	H9
3369	E8
3370	E8
3400	C8
3401	C8
3402	C8
3404	B9
3405	B9
3406	C10
3407	B9
3408	B9
3409	B9
3412	B8
3413	B8
3414	B8
3420	E9
3421	C2
3422	E9
3423	D10
3424	E10
3425	D11
3426	D11
3427	E11
3428	D8
3429	D9
3430	D9
3431	B4
3432	B2
3433	C2
3434	A5
3435	B6
3436	B2
3438	C5
3439	D8
3440	D8
3441	D8
3442	B5
3443	C5
3444	C5
3451	B5
3452	B5
3454	E10
4311	G3
4316	G5
4410	D3
4413	F12
4414	F12
4420	B6
4425	C2
4426	H2
4427	H2
4429	C2
5300	E2
5301	E2
5302	F2
5305	C8
5306	C9
5307	C8
6300	E2
6310	I5
6311	I5
6334	F9
6340	G8
6341	H8
6344	H6
6350	G11
6354	H9
6420	E9
6422	E9
6424	D11
6429	D9
6430	H4
6431	D8
6432	C5
7300	C7
7341	G7
7351	G10
7402	A2
7403	B6
7417	G8
7418	D9
7419	C9
7420	C9
7424	D11
7425	A10
7430	B5
7431	B5
7438	D10

Small Signal Board: TXT and Control

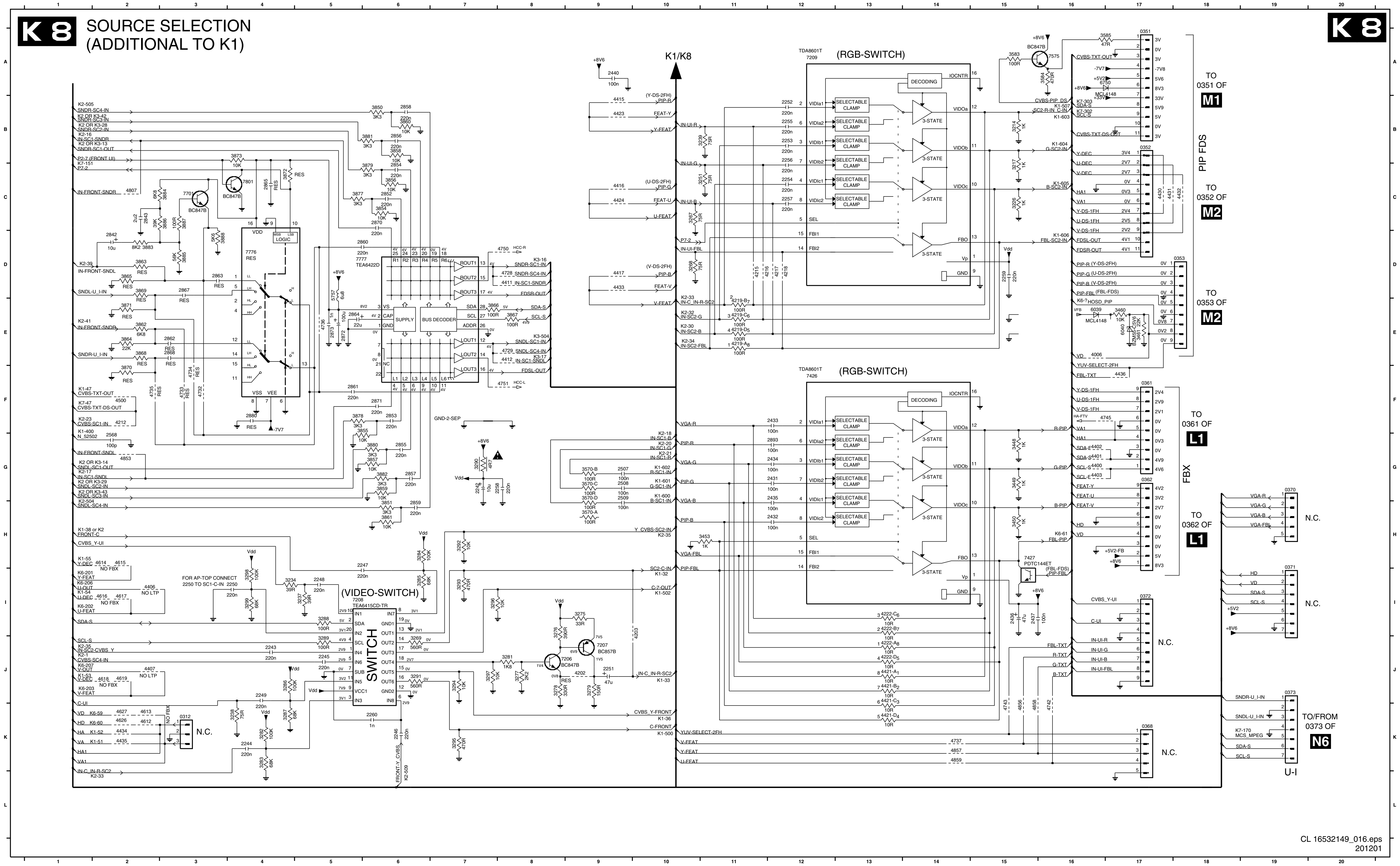
0341 B7
0355 B6
0356 B5
0375 F9
1001 I10
2001 L16
2002 K17
2003 G17
2005 B18
2006 G16
2007 F17
2008 C13
2009 C12
2010 C12
2011 C12
2012 C12
2013 K11
2014 I10
2015 J9
2016 H10
2021 K9
2022 K11
2023 K11
2024 J17
2025 K10
2026 K10
2027 C13
2028 C13
2029 K18
2030 K16
2031 B21
2032 K17
2035 L18
2037 J5
2038 J5
2039 K4
2040 C8
2041 L15
2042 K15
2043 K15
2044 K15
2045 G17
2046 J17
2049 B21
2050 I16
2051 I16
2052 I16
2053 I16
2054 I18
2055 K10
3001 C8
3003-A E10
3003-B E10
3003-C E10
3003-D A10
3004-A D10
3004-B D10
3004-C D10
3004-D D10
3005-A D10
3005-B D10
3005-C D10
3005-D A10
3006 B9
3007 C10
3009-A E10
3009-B E10
3009-C B10
3009-D C10
3010 C10
3011 C9
3023-A L13
3023-B L13
3023-C L13
3023-D L13
3024 L13
3026 L15
3027-A F10
3027-B F10
3027-C F10
3027-D F10
3028-A F10
3028-B F10
3028-C F10
3028-D E10
3029 K15
3030-A K15
3030-B K15
3030-C K15
3030-D J15
3031 G10
3032 G10
3033-A G10
3033-B G10
3033-C G10
3033-D G10
3034 J8
3035 I8
3036-A H9
3036-B H9
3036-C H9
3036-D H9
3039 I7
3041 K17
3042 L16
3043 K17
3045 I5
3047 K11
3048-A K14
3048-B K14
3048-C K14
3048-D K14
3049-A D2
3049-B D2
3049-C D2
3049-D D2
3050-A D2
3050-B D2
3050-C E2
3050-D E2
3051-A E2
3051-B E2
3051-C E2
3051-D E2
3052-A E2
3052-B F2
3052-C F2
3052-D F2
3053-A F2
3053-B F2
3053-C F2
3053-D F2
3054-A G2
3054-B G2
3054-C G2
3054-D G2
3055-A G2
3055-B G2
3055-C G2
3055-D H2
3056-A H2
3056-B H2
3056-C H2
3056-D H2
3057-A H2
3057-B H2
3057-C I2
3057-D I2
3059 C7
3062 L18
3063 F20
3066 D5
3067 E5
3068 E6
3069 L14
3070 L17
3071 K18
3072 L18
3073 K17
3074 K4
3075 H10
3076 H10
3080-A J15
3080-B J15
3080-C J15
3080-D J15
3082 K9
3083 L8
3084 L8
3085 L9
3086 I15
3090-A H15
3090-B G15
3090-C G15
3090-D H15
3091-A H15
3091-B G15
3091-C G15
3091-D H15
3092-A H15
3092-B G15
3092-C G15
3092-D I15
3093-A H15
3093-B H15
3093-C G15
3093-D I15
3094-A E15
3094-B I15
3094-C I15
3094-D E15
3095-A C15
3095-B I15
3095-C C15
3095-D E15
3096-A C15
3096-B E15
3096-C D15
3096-D E15
3097-A D15
3097-B E15
3097-C D15
3097-D E15
3098-A D15
3098-B D15
3098-C D15
3098-D D15
3099-A F15
3099-B F15
3099-C F15
3099-D F15
3259 J5
3260 K4
3261 K4
3262 K4
3263 K5
3895 K3
4001 H4
4002 I4
4003 I4
4005 E4
4008 G4
4009 D4
4010 C6
4011 B8
4012 E4
4014 E4
4015 D5
4017 F16
4018 F16
4019 G4
4020 C6
4021 C7
4022 C8
4023 C8
4024 H8
4025 H8
4027 F16
4029 J9
4802 K4
5002 J5
6001 H7
6002 H6
6003 H8
6004 G5
6006 G8
6008 G5
6009 H5
6012 C5
6013 C10
6017 G6
6019 G7
6021 H7
6023 G8
6025 G9
6026 G10
6037 D7
6238 K5
6250 J4
7001 G17
7002 C17
7003 C11
7006 K16
7007 L18
7008 I9
7009 J17
7010 I8
7011 J8
7012 E7
7013 C20
7014 L18
7015 L19
7016 L17
7019 D6
7020 K9
7205 K5
7216 J4


K 7
TXT & CONTROL
K1:K6
T11 R/77-7003
0.2V / div DC
1µs / div
T12 G/78-7003
0.2V / div DC
1µs / div
T13 B/79-7003
0.2V / div DC
1µs / div
T14 Fading/80-7003
0.2V / div DC
10µs / div
T16 CVBS/5-7003
0.2V / div DC
20µs / div
C1 Reset/c-7007
1V / div DC
10ms / div
C2 +3V3 DC
C3 6MHz/2016/1001
20mV / div AC
0.5µs / div
LIGHT_SENSOR
SERVICE-PINS
N.C.
FROM/TO 0241 OF E
SERVICE-DEFAULT
SERVICE-MODE
P50_OUT
P2-7 (FRONT UI)
DC-PROT
BC-PROT
LNA
P2-6_STATUS 3
P2-5_STATUS 4
STANDBY
FRONT-DETECT
FBCSO
MCS_MPEG
P50_IN
SOUND-ENABLE
RESET-AUDIO
HD_HOME
SCAVEM_SW
SDA-F
SCL-F
SDA-S
SCL-S
HOSD_PIP
VFB
VD
CVBS-TXT-DS-OUT
+3V3-STANDBY
+5V-STBY
7003
SAA5801H
µC
EXTERNAL CODE AND DATA INTERFACE
CLOCK GENERATOR AND DISPLAY TIMING
TXT EPG CLOSE CAPTION USA
DISPLAY INTERFACE
7002
M27V160
ROM
7013
M29W400T
FLASH
7001
HYB3118165
RAM
7008
M24C32
NVM
1001
6MHz
PLVA2650A
PDTC144ET
PDTA114ET
BZX284-C3V9
PMBT2369
BC847B
BC857B
LF33CV
BAT254
RESET-FLASH
R-TXT
G-TXT
B-TXT
CL 16532149_015.eps
131201

OTC		
Pin nr.	Pin name	
93	P1-0/T0	Hd@home
98	P1-5/INT2	MCS/MPEG
108	P2-5/ADC3	STATUS 4
109	P2-6/ADC4	STATUS 3
110	P2-7/ADC5	RGB1fh/frontUI
115	P3-2	n.a.
118	P3-5/TTD	n.a.

Small Signal Board: Source Selection (Additional to K1)

0312 K3
0351 A17
0352 B17
0353 D18
0361 F17
0362 G17
0368 K17
0370 G19
0371 I19
0372 I17
0373 J19
2242 G7
2243 J4
2244 K4
2245 J5
2246 K6
2247 H6
2248 I5
2249 J4
2250 I4
2251 J9
2252 B12
2253 B12
2254 C12
2255 B12
2256 B12
2257 C12
2258 G8
2259 D15
2260 K6
2431 G12
2432 H12
2433 F12
2434 G12
2435 G12
2436 I15
2437 I15
2440 A9
2507 G9
2508 G9
2509 G9
2568 G2
2842 D2
2843 C2
2852 C6
2853 F6
2854 C6
2855 G6
2856 B6
2857 G6
2858 B6
2859 H6
2860 D6
2861 F5
2862 E3
2863 D3
2864 E5
2865 C4
2867 D3
2868 E3
2870 C6
2871 F6
2872 E5
2873 E5
2880 F4
2893 G12
3214 B15
3217 C15
3226 C15
3234 I4
3237 I5
3238 K4
3239 B11
3251 C11
3267 C10
3268 D10
3269 J6
3275 I9
3276 I8
3277 J8
3278 J8
3279 J9
3281 J8
3282 K4
3283 K4
3284 H6
3285 I6
3286 J4
3287 K4
3288 I5
3289 J5
3290 G7
3291 J6
3292 H7
3293 I7
3294 J7
3295 K7
3296 I7
3297 J7
3298 I4
3299 I4
3448 G15
3449 G15
3450 H15
3453 H11
3460 E17
3461 E17
3570-A H9
3570-B G9
3570-C G9
3570-D G9
3583 A15
3584 A16
3585 A17
3850 B6
3851 H6
3854 C6
3855 F6
3856 C6
3857 G6
3858 B6
3859 G6
3860 B6
3861 H6
3862 E2
3863 D2
3864 E2
3865 D2
3866 E7
3867 E8
3868 E2
3869 D2
3870 F2
3871 E2
3872 C4
3873 B4
3877 C5
3878 F5
3879 C6
3880 G6
3881 B6
3882 G6
3883 D2
3884 C3
3885 D3
3886 C3
3887 C3
3888 D3
4006 E16
4202 J9
4203 I10
4212 F2
4215 D11
4216 D11
4217 D12
4218 D12
4219-A E11
4219-B E11
4219-C E11
4219-D E11
4222-A J13
4222-B I13
4222-C I13
4222-D J13
4400 G16
4401 G16
4402 G16
4403 G16
4406 I2
4407 J2
4411 D8
4412 E8
4415 B9
4416 C9
4417 D9
4421-A J13
4421-B J13
4421-C J13
4421-D K13
4423 B9
4424 C9
4430 C17
4431 C17
4432 C18
4433 D9
4434 K2
4435 K2
4436 F17
4500 F2
4612 K2
4613 K2
4614 H2
4615 H2
4616 I2
4617 I2
4618 J2
4619 J2
4626 K2
4627 K2
4728 D8
4729 E8
4732 F3
4733 F3
4734 F3
4735 F2
4736 E5
4737 K14
4742 K16
4743 K15
4745 F17
4750 D8
4751 F8
4807 C2
4853 G2
4856 K15
4857 K14
4858 K15
4859 K14
5757 D5
6039 E16
6040 E17
6750 A16
7206 J8
7207 J9
7208 I5
7209 A12
7426 F12
7427 H15
7575 A16
7701 C3
7776 D4
7777 D5
7801 C4


K 8
SOURCE SELECTION
(ADDITIONAL TO K1)
K1/K8
TDA8601T
7209
(RGB-SWITCH)
TDA8601T
7426
(RGB-SWITCH)
DECODING
SELECTABLE CLAMP
3-STATE
SEL
FBI1
FBI2
FBO
IOCNTR
VIDOa
VIDOb
VIDOc
(VIDEO-SWITCH)
7208
TEA6415CD-TR
SWITCH
7777
TEA6422D
SUPPLY
BUS DECODER
LOGIC
7776
RES
BC847B
7701
7801
7575
7206
7207
BC857B
7427
PDTC144ET
TO 0351 OF M1
TO 0352 OF M2
TO 0353 OF M2
PIP FDS
TO 0361 OF L1
TO 0362 OF L1
FBX
TO/FROM 0373 OF N6
U-I
N.C.
FOR AP-TOP CONNECT 2250 TO SC1-C-IN
GND-2-SEP
+8V6
-7V7
Vdd
CL 16532149_016.eps
201201

Diversity table Small Signal Board [K8]		
Item	no DW-module	DW-module
0351	-	X
0352	-	X
0353	-	X
0370	-	-
0371	-	-
2431	-	-
2432	-	-
2433	-	-
2434	-	-
2435	-	-
2437	-	-
2440	-	-
2893	-	-
3445	-	-
3446	-	-
3447	-	-
3448	-	-
3449	-	-
3450	-	-
3453	-	-
3583	-	100R
3584	-	470R
3585	-	47R
4222	-	-
4421	-	4x10R
4423	Jumper	Jumper
4424	Jumper	Jumper
4430	Jumper	-
4431	Jumper	-
4432	Jumper	-
4433	Jumper	Jumper
4436	-	Jumper
4500	Jumper	Jumper
7426	-	-
7427	-	-
7428	-	-
7429	-	-
7575	-	BC847B

Small Signal Panel [K8] (for readability)	
Item	
2842	10 F
2843	2,2 F
2852	220nF
2853	220nF
2854	220nF
2855	220nF
2856	220nF
2857	220nF
2858	220nF
2859	220nF
2860	220nF
2861	220nF
2864	22 F
2870	220nF
2871	220nF
2872	100 F
2873	1nF
3850	3k3
3851	3k3
3854	10k
3855	10k
3856	10k
3857	10k
3858	10k
3859	10k
3860	10k
3861	10k
3862	6k8
3864	22k
3866	100R
3867	100R
3877	3k3
3878	3k3
3879	3k3
3880	3k3
3881	3k3
3882	3k3
3883	8k2
3884	6k8
3885	56k
3886	39k
3887	100R
3888	5k6
4411	-
4412	-
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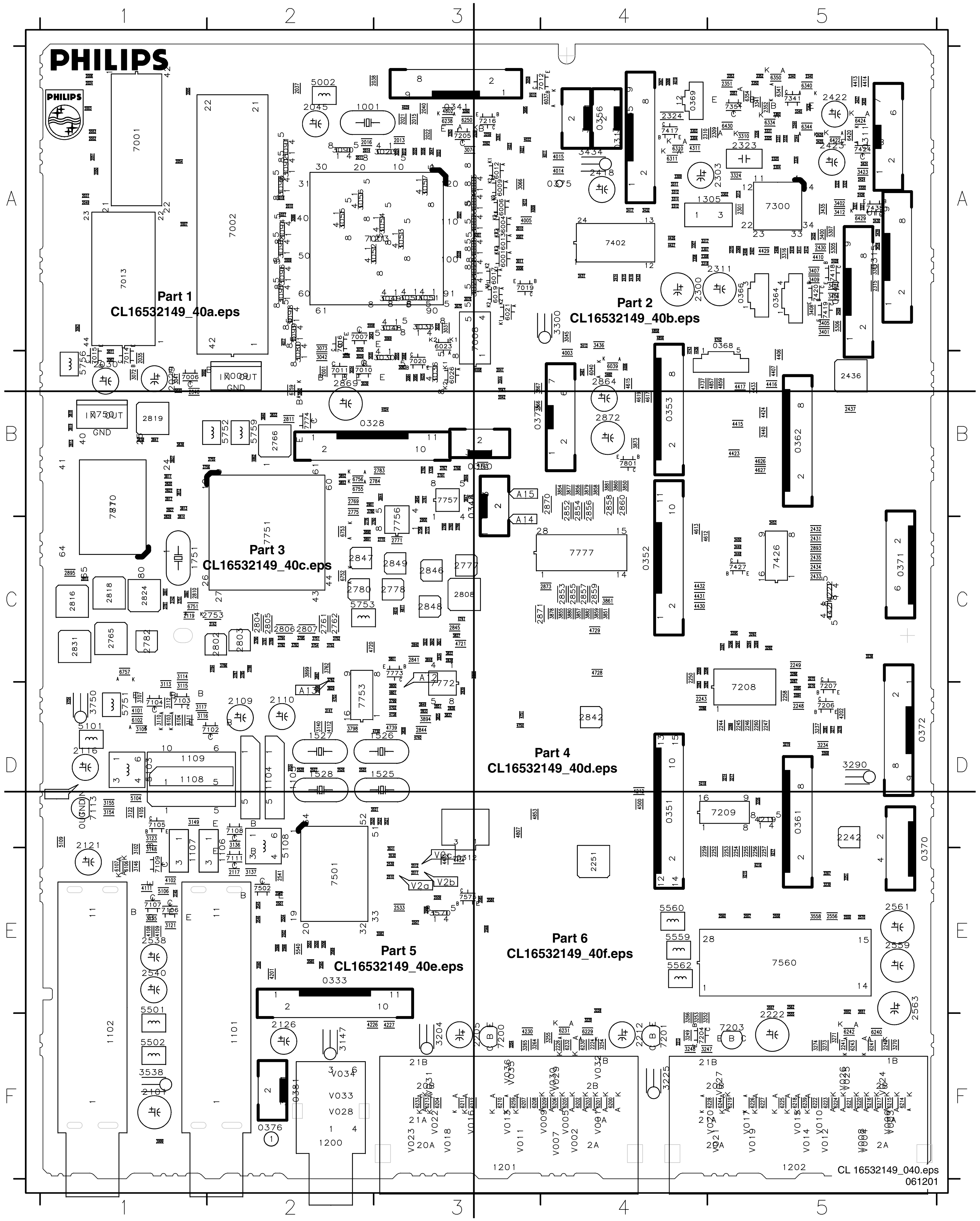
4732	Jumper
4736	Jumper
5757	6,8 H
7701	BC847B
7777	TEA6422D

Layout Small Signal Board (Top Overview)



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0375	A4
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0381	F2
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1102	F1
1104	D2
1105	D2
1106	D2
1107	D1
1108	D1
1109	D1
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2006	A1
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2008	A2
2009	A2
2010	A2
2011	A2
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2014	A2
2015	A3
2016	A2
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2031	A1
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2051	A1
2052	A1
2053	A1
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2222	F5
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2226	F4
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2771	C3
2772	C3
2775	B2
2776	C2
2777	C3
2778	C3
2780	C2
2782	C1
2783	B3
2784	B3
2790	C3
2791	B3
2792	B3
2801	C1
2802	C1
2803	C2
2804	C2
2805	C2
2806	C2
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2832	C3
2833	D3
2834	C3
2837	B1
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2839	D3
2840	C3
2841	C3
2842	D4
2844	D3
2845	C3
2846	C3
2847	C2
2848	C3
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2851	D3
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2855	C4
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2857	C4
2858	B4
2859	C4
2860	B4
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3004	A3
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3047	A3
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3054	A2
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3056	A2
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3059	A3
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3069	A3
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3071	B1
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3110	D1
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3112	D1
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3114	C1
3115	D1
3116	D1
3117	D1
3121	E1
3122	D1
3123	D1
3124	D2
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3143	C2
3145	E1
3146	E1
3147	F2
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3149	D1
3154	D1
3155	D1
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3237	D5
3238	C5
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3314	A4
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3430	A5
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3435	A5
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3450	C5
3453	C5
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4807	D3
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6229	F4
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6231	F4
6232	F4
6233	F3
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6240	F5
6241	F5
6242	F5
6243	F5
6244	F5
6250	A3
6259	F3
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6420	A5
6422	A5
6424	A5
6429	A5
6430	A5
6751	C1
6752	C2
6753	C2
6755	B2
6756	B2
6757	C1
6759	B2
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7006	B1
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7014	B1
7015	B1
7016	A2
7019	A3
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7104	D1
7105	D1
7106	E1
7107	E1
7108	D2
7109	E1
7111	E2
7113	D1
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7201	F4
7203	F5
7204	F5
7205	A3
7206	D5
7207	C5
7208	C5
7209	D4
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7300	A5
7341	A5
7351	A5
7402	A4
7417	A4
7418	A5
7419	A5
7420	A5
7424	A5
7426	C5
7427	C5
7438	A5
7501	D2
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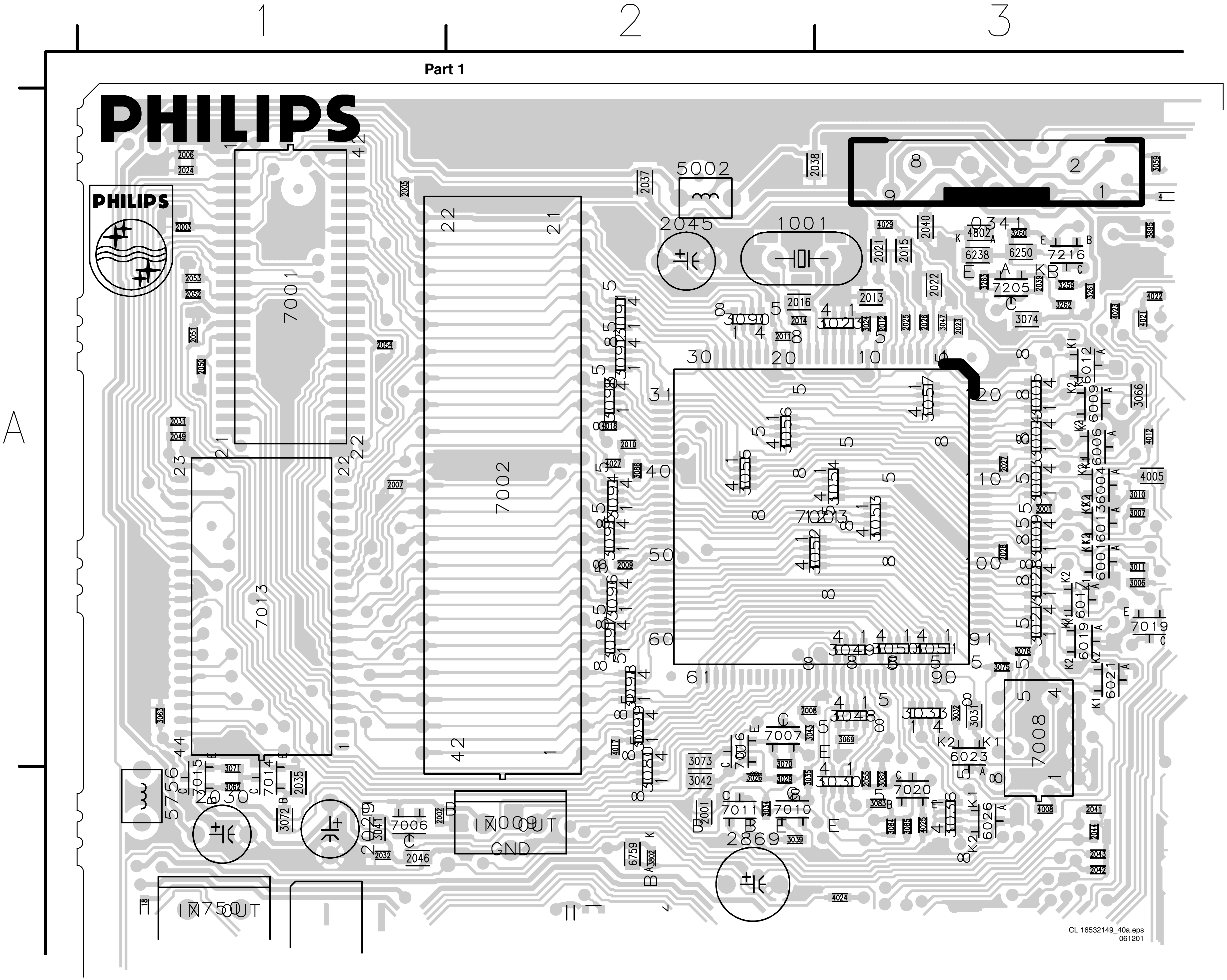
Layout Small Signal Board (Top View Part 1)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Part 1
PHILIPS
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7007
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7016
7019
7020
7205
7216
5002
5756
2045
1001
2030
2029
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2869
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3074
3066
4005
6023
6026
6021
6012
6009
6006
6004
6013
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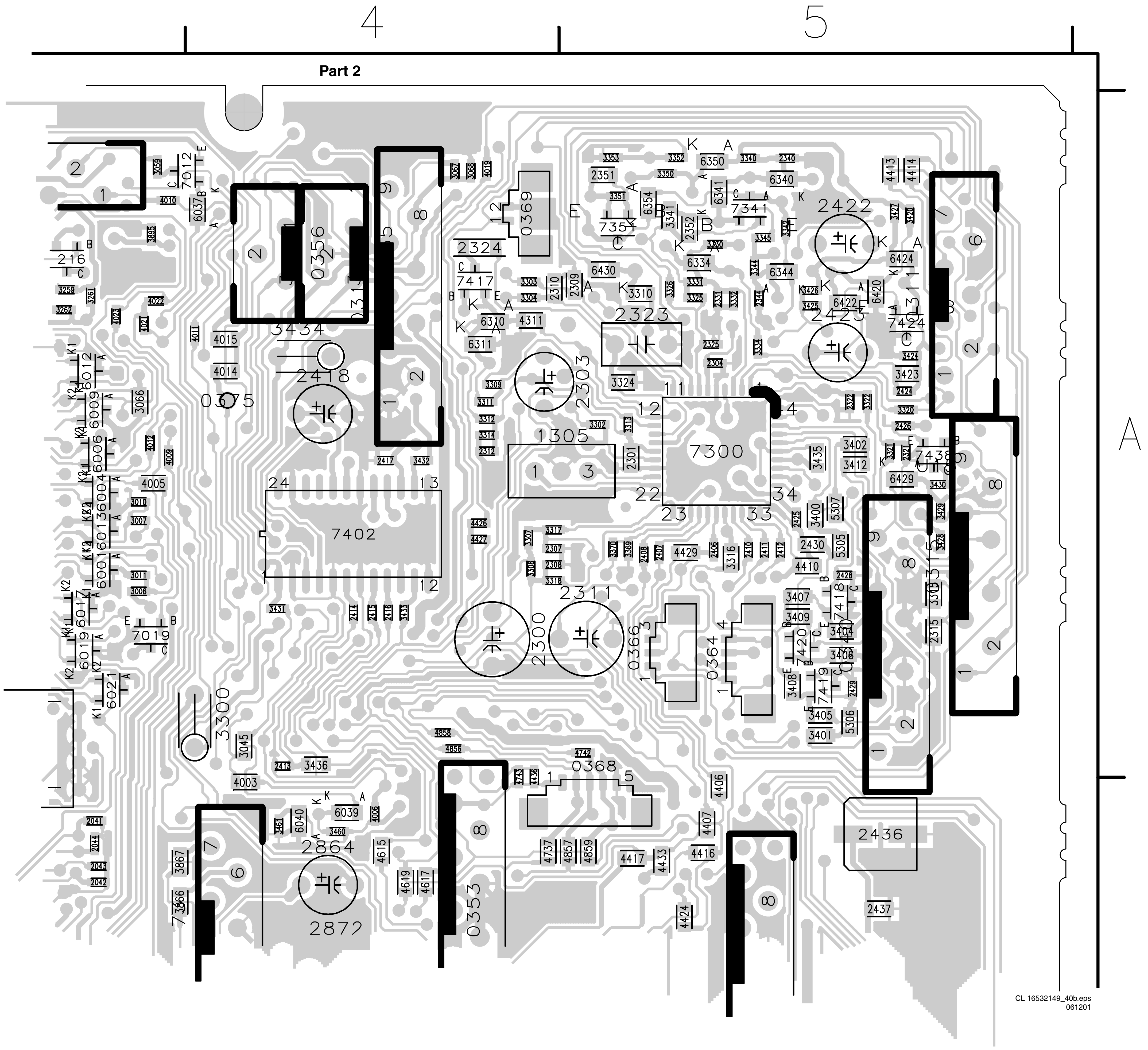
IN OUT GND
CL 16532149_40a.eps
061201

Layout Small Signal Board (Top View Part 2)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5
A
Part 2
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7420
7419
7012
7019
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0356
0366
0364
0368
0353
0375
1305
2300
2303
2311
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2324
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2418
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2423
2430
2436
2437
2864
2872
2301
2309
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3300
3310
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3407
3409
3404
3406
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3401
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4005
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4015
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4424
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4619
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4859
5305
5306
5307
6004
6006
6009
6012
6013
6016
6017
6019
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6311
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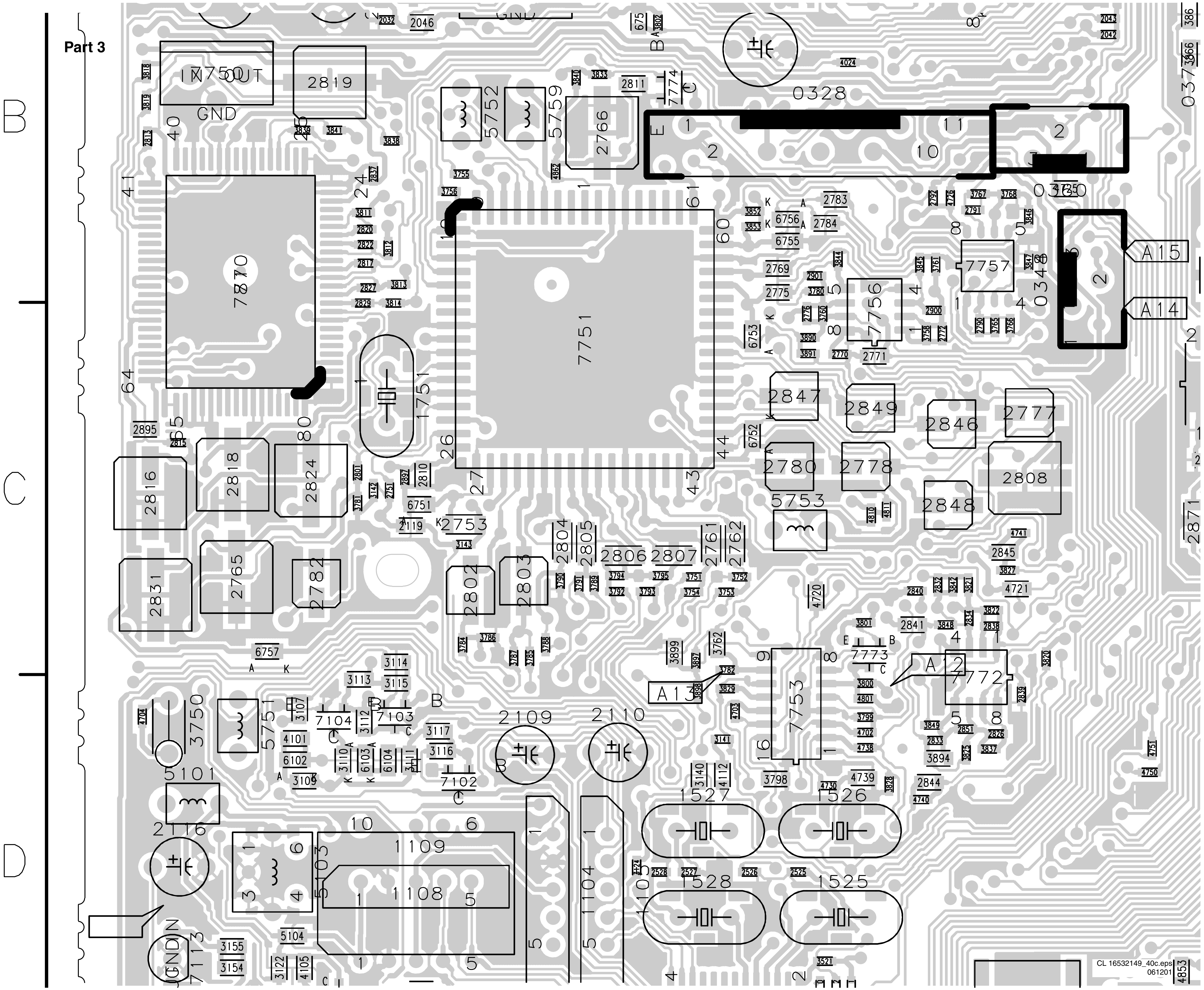
6354
6420
6422
6424
6429
6430
216
K
A
B
C
E
1
2
5
6
8
9
11
12
13
22
23
24
33
34

CL 16532149_40b.eps
061201

Layout Small Signal Board (Top View Part 3)


Part 3
B
C
D
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IN
OUT
GND
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5752
5759
2766
2811
7774
0328
0380
0348
A15
A14
7770
7751
1751
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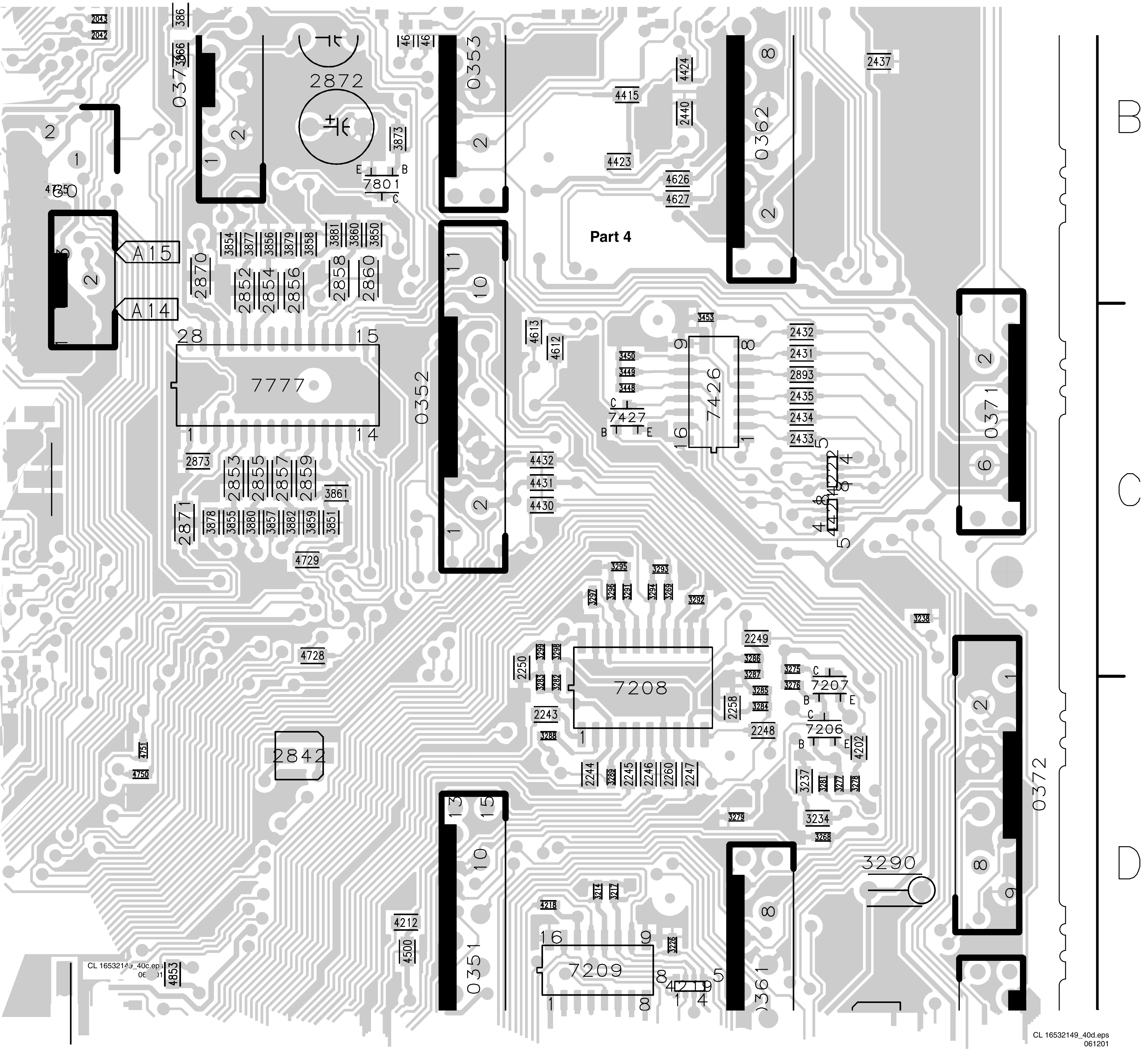
CL 16532149_40c.eps
061201

Layout Small Signal Board (Top View Part 4)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Part 4
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4212
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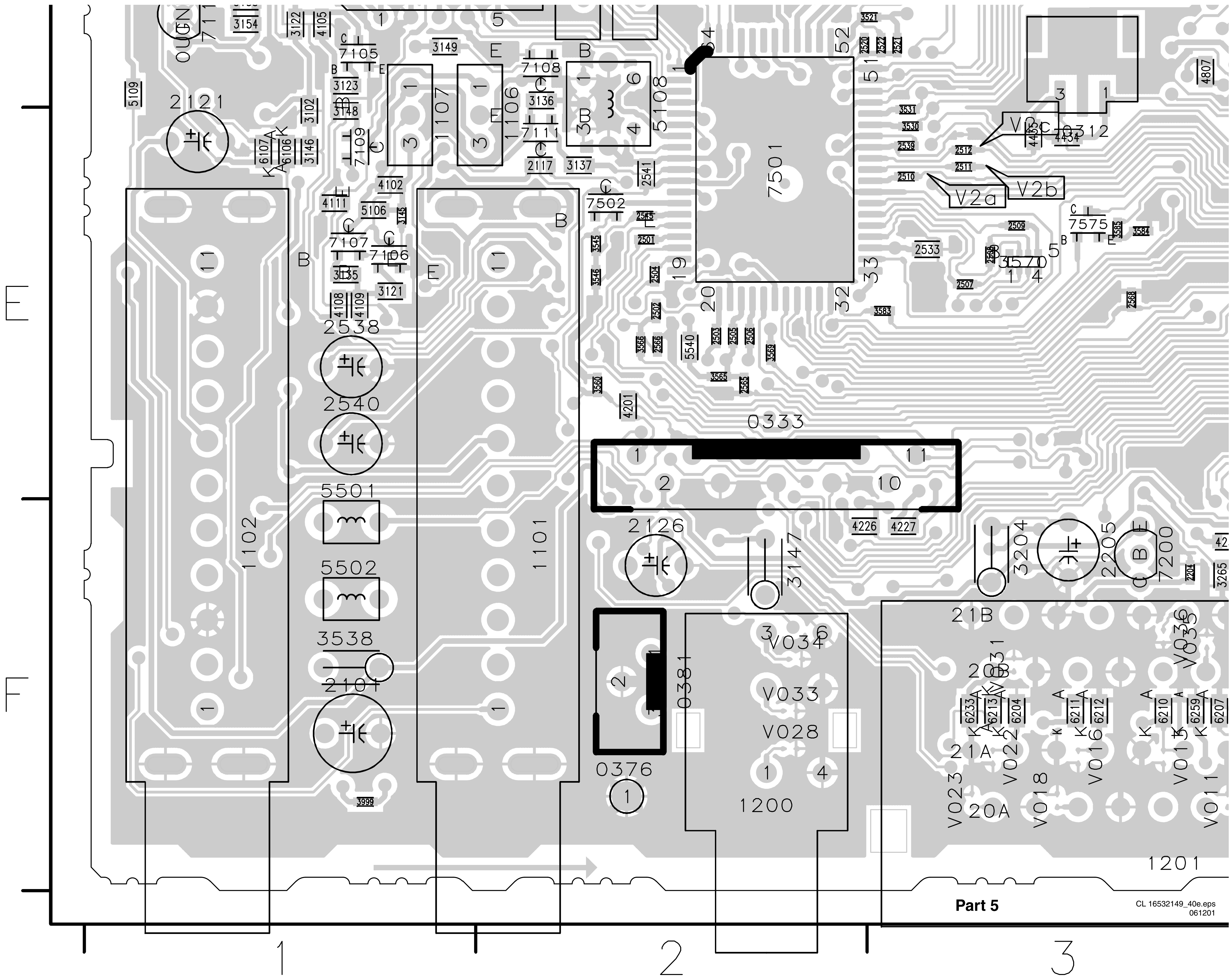
CL 16532149_40c.eps 061201

CL 16532149_40d.eps
061201

Layout Small Signal Board (Top View Part 5)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V2b
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3538
2101
3999
1102
1101
2126
3147
3204
2205
7200
2204
3265
0381
0376
V034
V033
V028
1200
21B
20B
21A
20A
V031
V036
V035
6233
6213
6204
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6212
6210
6259
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V022
V023
V018
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E
F
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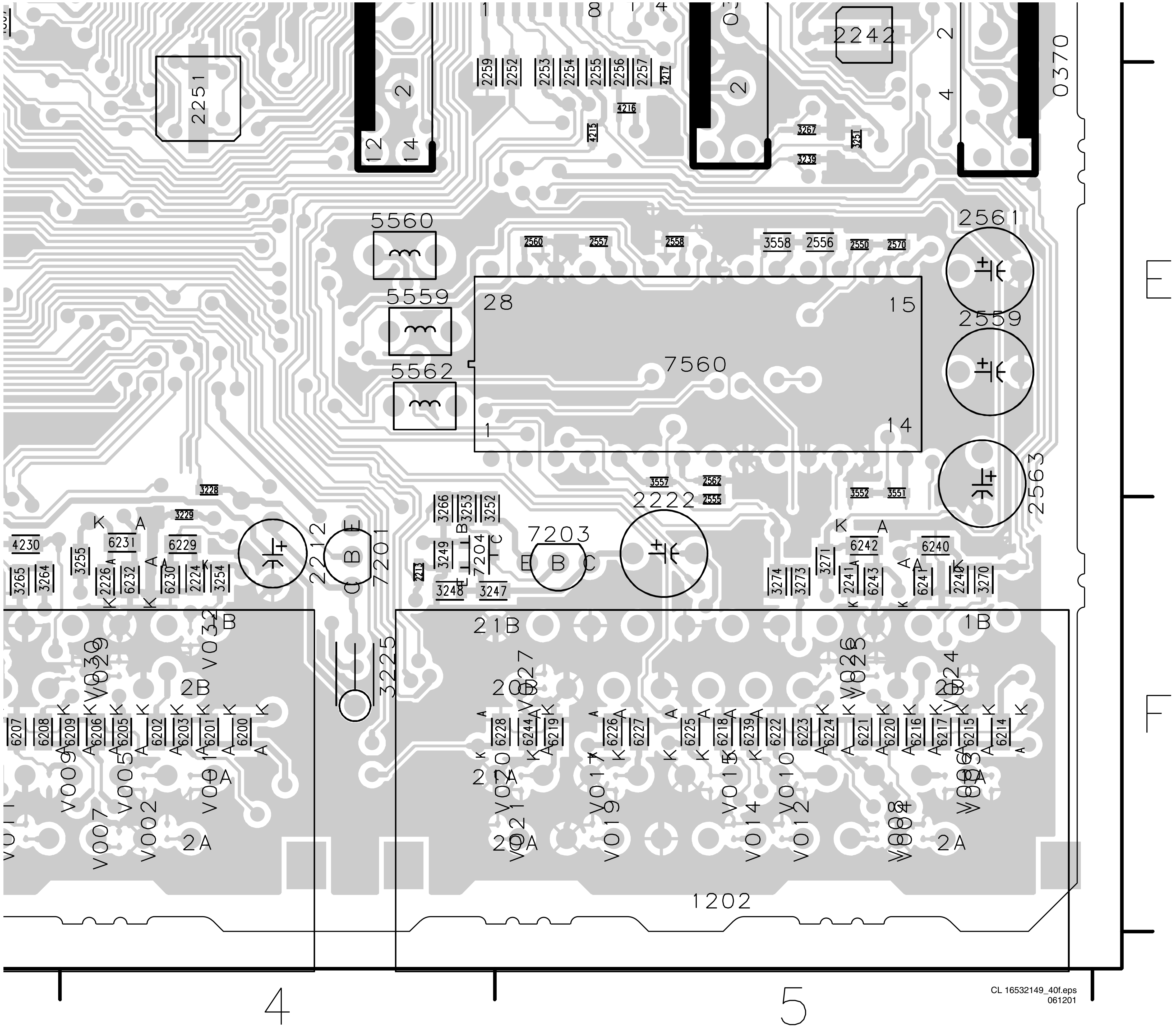
2
3
Part 5
CL 16532149_40e.eps
061201

Layout Small Signal Board (Top View Part 6)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3253
3252
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7203
E B C
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2240
3270
3225
1202
21B
20B
2B
1B
21A
20A
2A
1A
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6208
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6202
6203
6201
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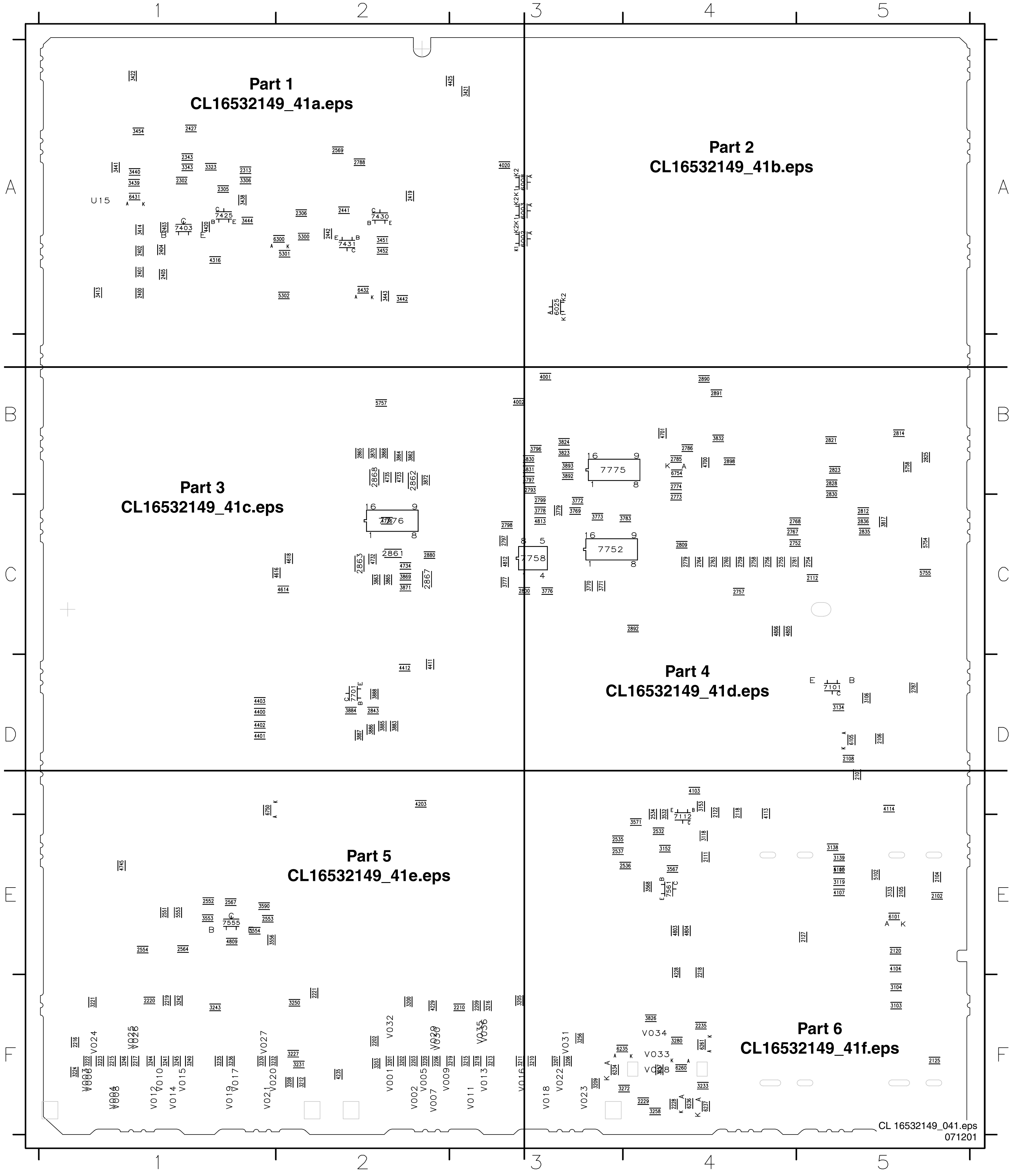
V029
V032
V027
V026
V025
V024
V009
V005
V001
V007
V002
V020
V021
V017
V019
V015
V014
V010
V012
V008
V004
V006
V003
E
F
4
5

CL 16532149_40f.eps
061201

Layout Small Signal Board (Bottom Overview)



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2105	E5	2793	B3	3246	F1	4107	E5	7775	B3
2106	D5	2797	C3	3250	F2	4110	E5	7776	C2
2107	D5	2798	C3	3256	F3	4113	D4		
2108	D5	2799	C3	3257	F4	4114	D5		
2111	E4	2800	C3	3258	F4	4203	D2		
2112	C5	2809	C4	3272	F4	4228	E4		
2118	D4	2812	C5	3280	F4	4229	F2		
2120	E5	2814	B5	3306	A1	4235	F2		
2122	D4	2821	B5	3323	A1	4316	A1		
2125	F5	2823	B5	3343	A1	4400	D1		
2127	E5	2825	B5	3413	A1	4401	D1		
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2203	F2	2830	C5	3421	A3	4403	D1		
2206	F2	2835	C5	3422	A1	4411	D2		
2209	F3	2836	C5	3438	A1	4412	D2		
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2215	F1	2861	C2	3440	A1	4425	A3		
2216	F1	2862	B2	3441	A1	4614	C2		
2217	F1	2863	C2	3442	A2	4616	C2		
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2221	F2	2880	C2	3452	A2	4732	C2		
2228	F4	2890	B4	3454	A1	4733	B2		
2229	F4	2891	B4	3532	D4	4734	C2		
2235	F4	2892	C4	3553	E1	4735	B2		
2302	A1	2898	B4	3554	E1	4736	C2		
2305	A1	3103	F5	3556	E1	4745	E1		
2306	A2	3104	F5	3567	E4	4803	E4		
2313	A1	3106	D5	3568	E4	4804	E4		
2343	A1	3118	E4	3571	E4	4805	C4		
2400	A1	3119	E5	3590	E1	4806	C4		
2401	A1	3133	E5	3769	C3	4809	E1		
2402	A1	3134	D5	3770	C3	4812	C3		
2403	A1	3138	E5	3771	C3	4813	C3		
2404	A1	3139	E5	3772	C3	5102	E5		
2405	A1	3152	E4	3773	C3	5105	E5		
2419	A2	3153	D4	3776	C3	5300	A2		
2427	A1	3200	F2	3777	C3	5301	A2		
2441	A2	3201	F2	3778	C3	5302	A2		
2442	A2	3202	F2	3779	C3	5553	E1		
2532	E4	3203	F2	3783	C4	5754	C5		
2534	D4	3205	F3	3796	B3	5755	C5		
2535	E3	3206	F3	3797	B3	5757	B2		
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2537	E3	3208	F2	3823	B3	6002	A3		
2551	E1	3209	F3	3824	B3	6003	A3		
2552	E1	3210	F3	3826	F4	6008	A3		
2553	E1	3211	F3	3830	B3	6025	A3		
2554	E1	3212	F2	3831	B3	6101	E5		
2564	E1	3213	F3	3832	B4	6105	D5		
2567	E1	3215	F3	3862	B2	6234	F3		
2569	A2	3216	F3	3863	C2	6235	F3		
2752	C4	3218	F3	3864	B2	6236	F4		
2754	C5	3219	F3	3865	C2	6237	F4		
2755	C4	3220	F2	3868	B2	6260	F4		
2756	C4	3221	F1	3869	C2	6261	F4		
2757	C4	3222	F1	3870	B2	6300	A2		
2758	C4	3223	F1	3871	C2	6431	A1		
2759	C4	3224	F1	3872	B2	6432	A2		
2760	C4	3227	F2	3883	D2	6750	D1		
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2768	C4	3233	F4	3887	D2	7403	A1		
2773	C4	3235	F1	3888	D2	7425	A1		
2774	B4	3236	F1	3892	B3	7430	A2		
2779	C4	3240	F1	3893	B3	7431	A2		
2781	C4	3241	F1	4001	B3	7555	E1		
2785	B4	3242	F1	4002	B3	7561	E4		
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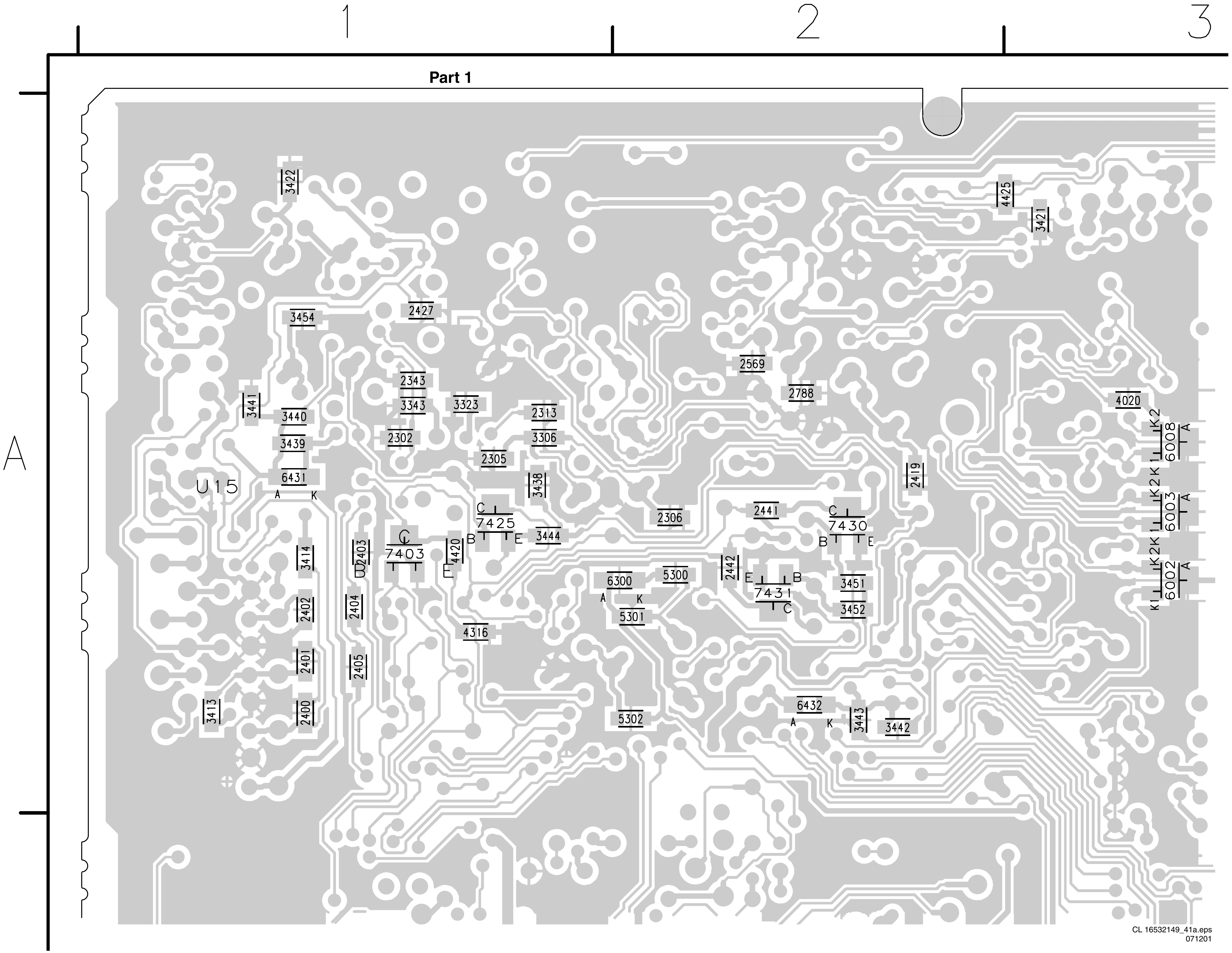
Layout Small Signal Board (Bottom View Part 1)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2305
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A K
U15
3438
2419
K2
6008
A
K1
K2
6003
A
K1
K2
6002
A
K1
C
7425
B E
3444
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C
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B E
3414
2403
C
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E
4420
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E B
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C
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A K
5300
3451
5301
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2402
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4316
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3442

CL 16532149_41a.eps
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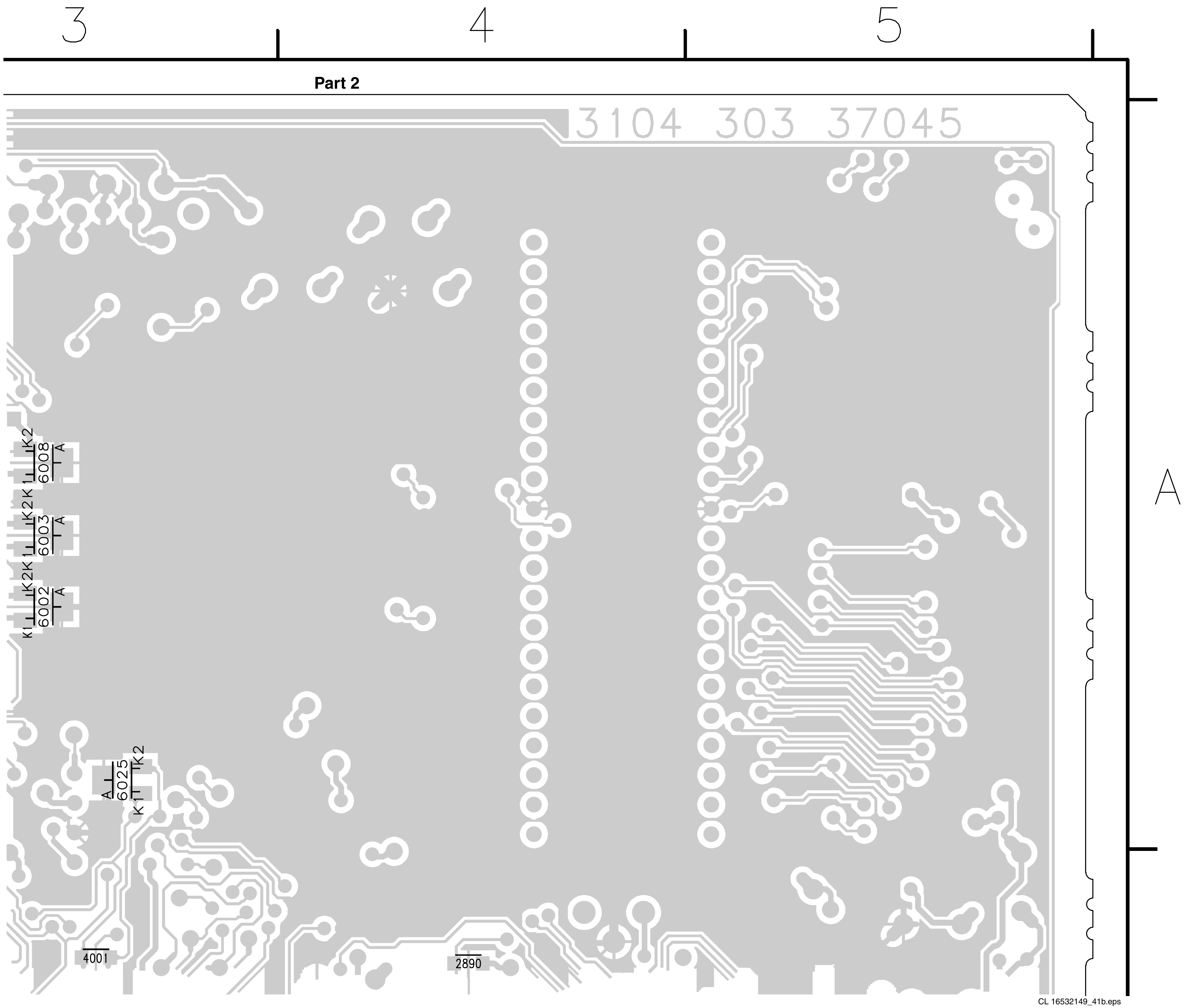
Layout Small Signal Board (Bottom View Part 2)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5
Part 2
3104 303 37045
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K2
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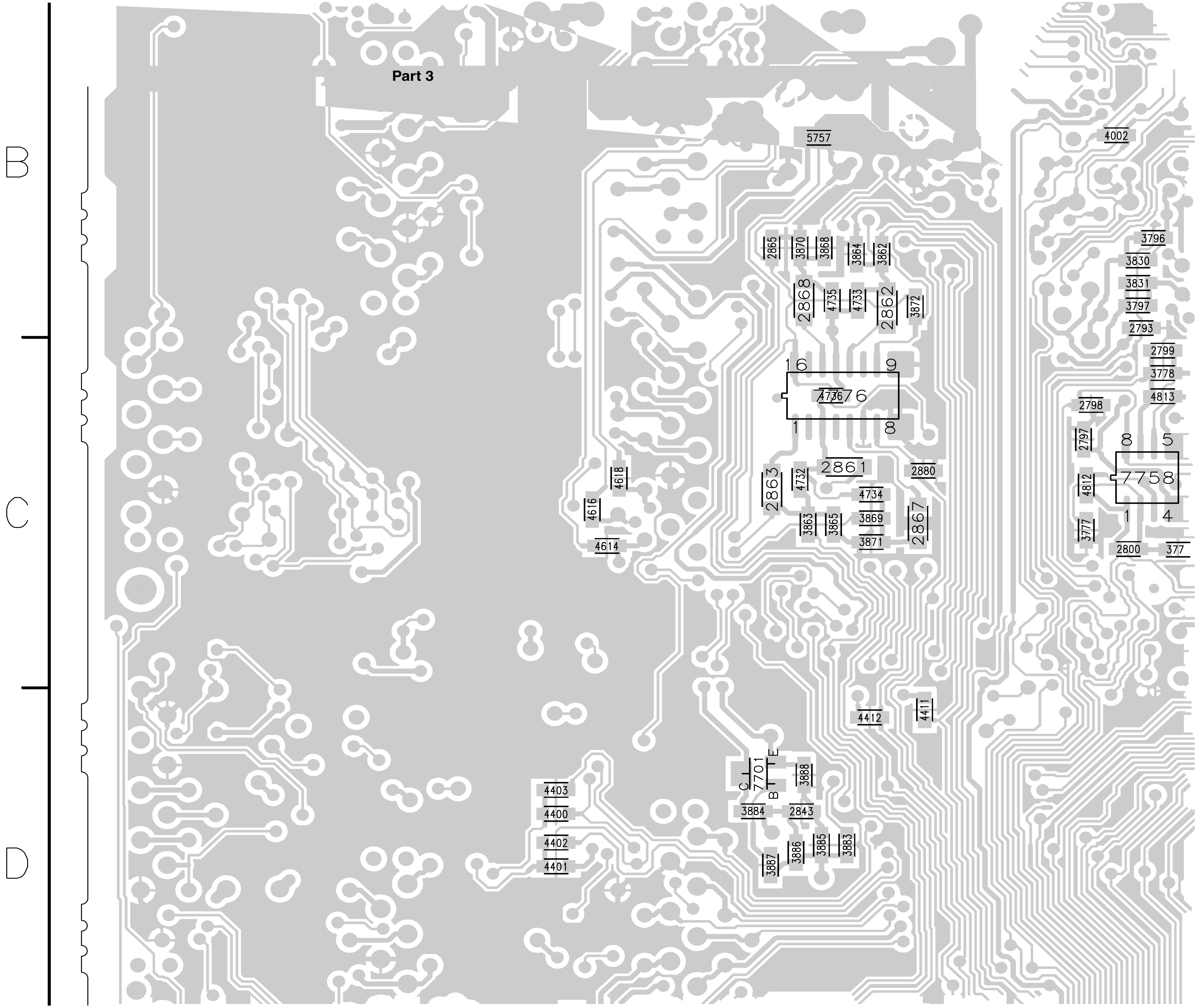
CL 16532149_41b.eps
071201

Layout Small Signal Board (Bottom View Part 3)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7758
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4402
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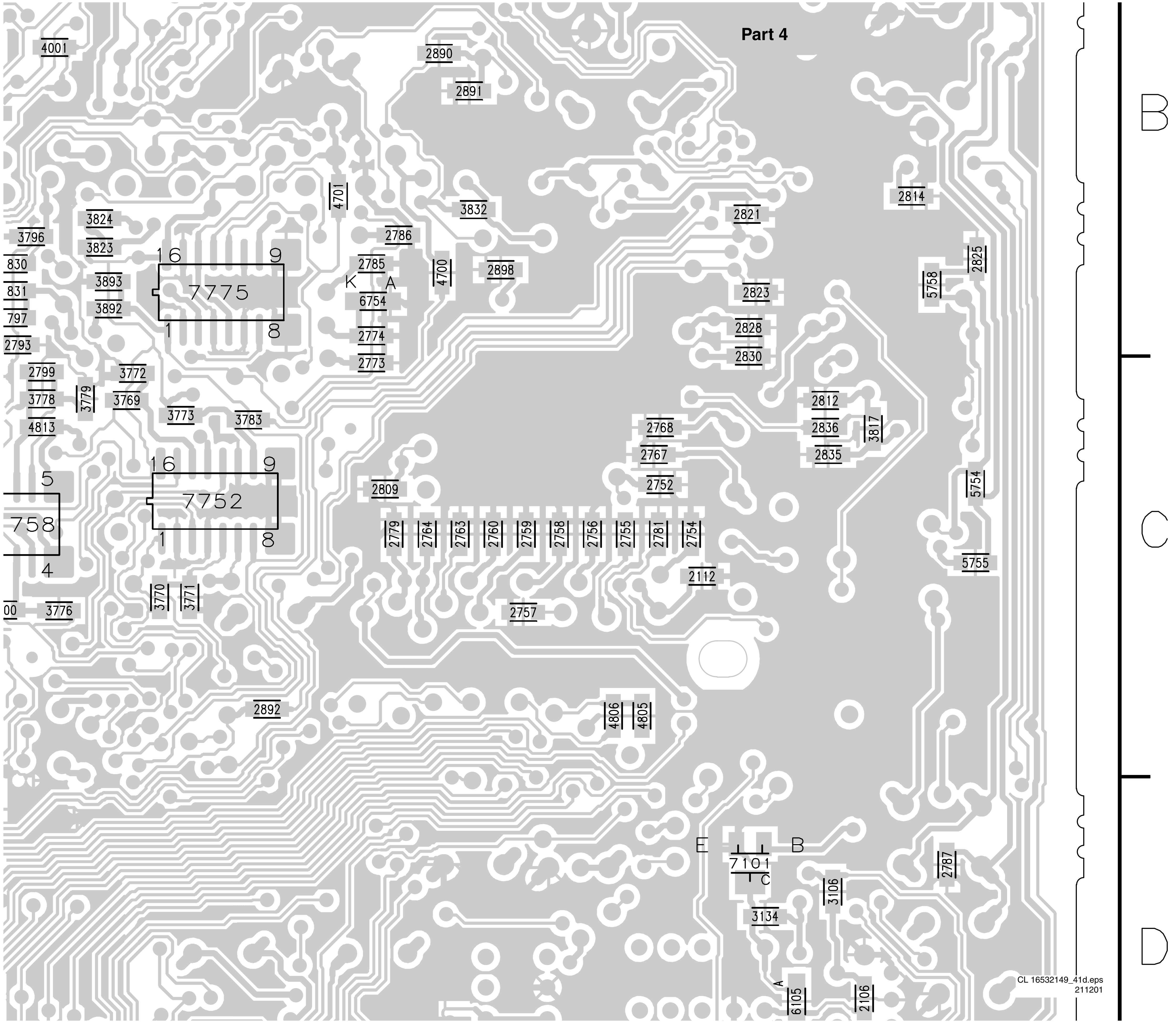
CL 16532149_41c.eps
201201

Layout Small Signal Board (Bottom View Part 4)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4805
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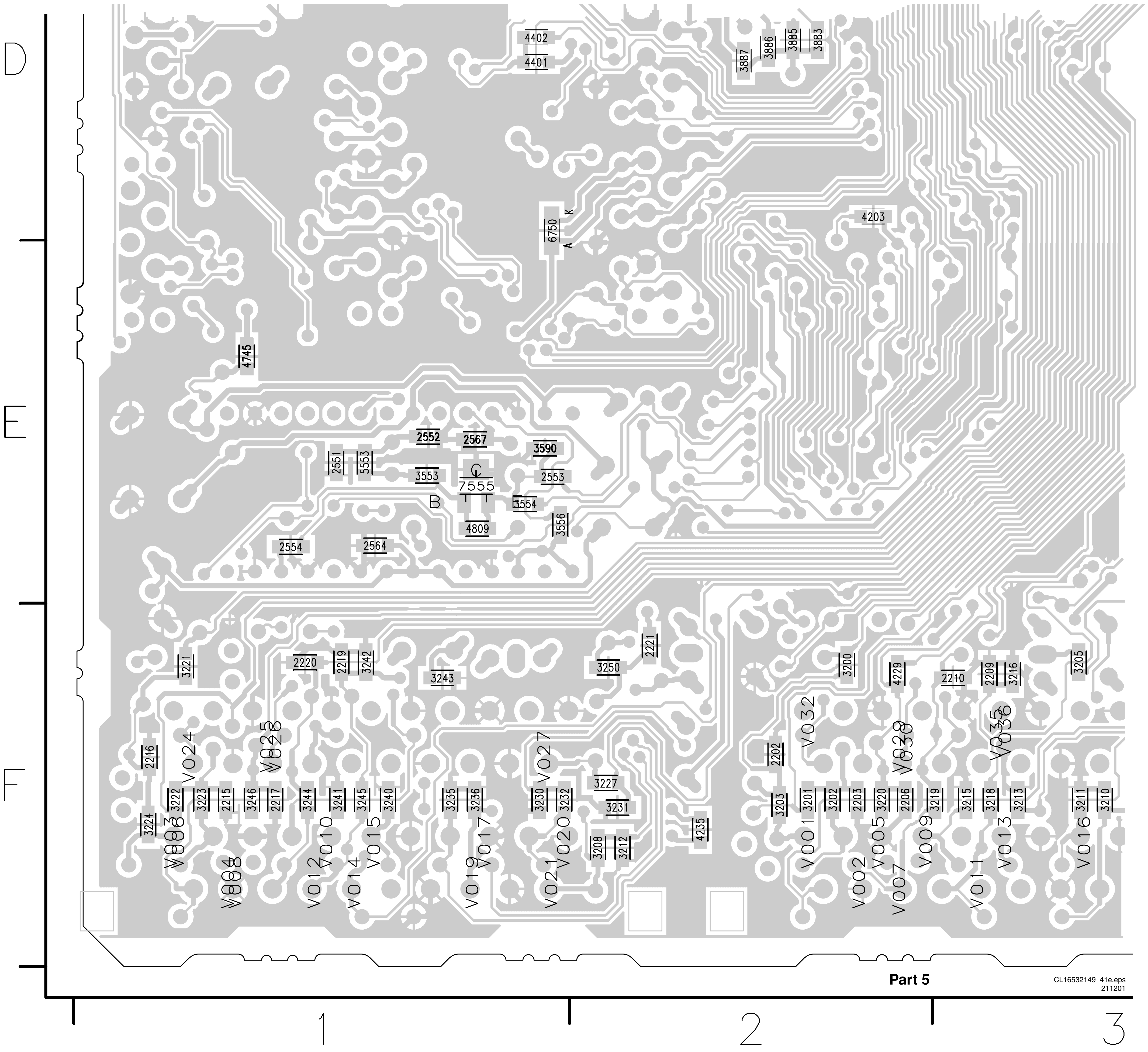
2106
B
C
D

CL 16532149_41d.eps
211201

Layout Small Signal Board (Bottom View Part 5)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3553
C
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B
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4809
2554
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3221
2220
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V030
V035
V036
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V025
V026
V027
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V003
V004
V005
V007
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V012
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V019
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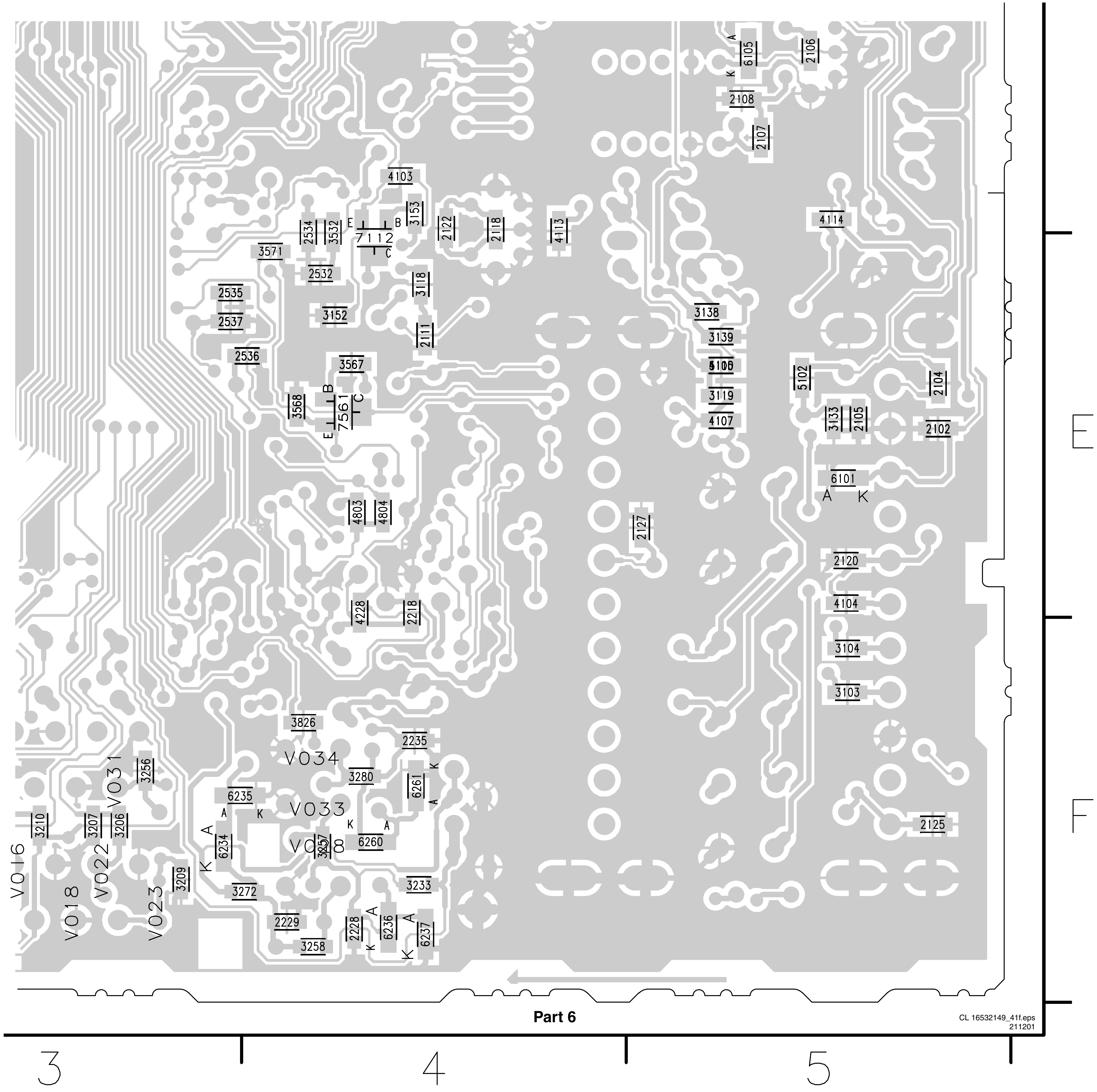
V021
Part 5

CL16532149_41e.eps
211201

Layout Small Signal Board (Bottom View Part 6)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7561
C
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6105
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K
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2108
2107
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3139
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5102
2104
3133
2105
2102
6101
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K
4803
4804
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3103
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V034
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3256
V031
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K
V033
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V022
3209
V018
V023
3272
3233
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2228
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K
6236
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3
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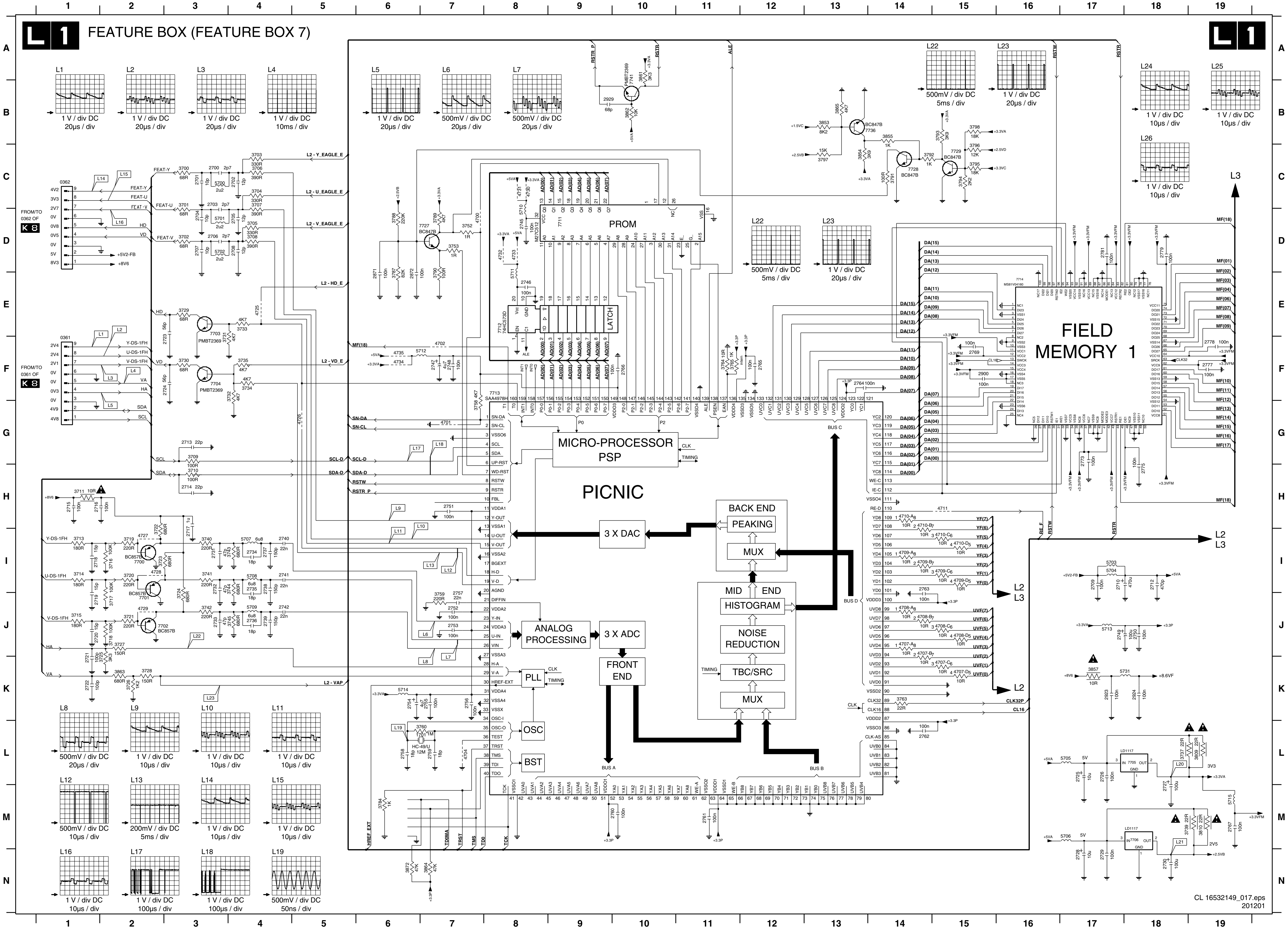
5

Part 6

CL 16532149_41f.eps
211201

Feature Box 7 Panel: Feature Box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FEATURE BOX (FEATURE BOX 7)
FROM/TO 0362 OF K8
FROM/TO 0361 OF K8
PROM
LATCH
MICRO-PROCESSOR PSP
PICNIC
FIELD MEMORY 1
BACK END
PEAKING
MUX
3 X DAC
MID
END
HISTOGRAM
NOISE REDUCTION
TBC/SRC
ANALOG PROCESSING
3 X ADC
FRONT END
PLL
OSC
BST
BUS A
BUS B
BUS C
BUS D
L2
L3
CL 16532149_017.eps
201201

0361	E1
0362	C1
1701	L7
2700	C3
2701	C3
2702	C4
2703	C3
2704	D3
2705	D4
2706	D3
2707	D3
2708	D4
2709	I17
2710	I17
2712	I18
2713	G3
2714	H3
2715	H1
2716	H1
2717	I3
2718	I1
2719	J1
2720	J1
2721	K1
2722	K1
2723	F3
2724	F3
2725	L17
2726	L17
2727	M18
2728	N17
2729	N17
2730	N18
2731	I3
2732	I3
2733	J3
2734	I4
2735	I4
2736	J4
2737	I4
2738	I4
2739	J4
2740	I4
2741	I4
2742	J4
2745	D8
2746	E8
2747	F7
2748	F7
2749	J17
2750	J18
2751	H7
2752	J7
2753	J7
2754	K6
2755	K7
2756	K7
2757	I7
2758	L6
2759	L7
2760	M10
2761	M11
2762	L14
2763	I14
2764	F13
2765	F12
2766	F10
2767	M19
2769	F15
2773	G17
2775	H18
2777	F19
2778	F19
2779	D18
2781	D17
2871	E6
2872	E6
2900	F15
2923	K17
2924	K18
2929	B9
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3701	C3
3702	D3
3703	C4
3704	C4
3705	D4
3706	C4
3707	C4
3708	D4
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3733	E4
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3735	F4
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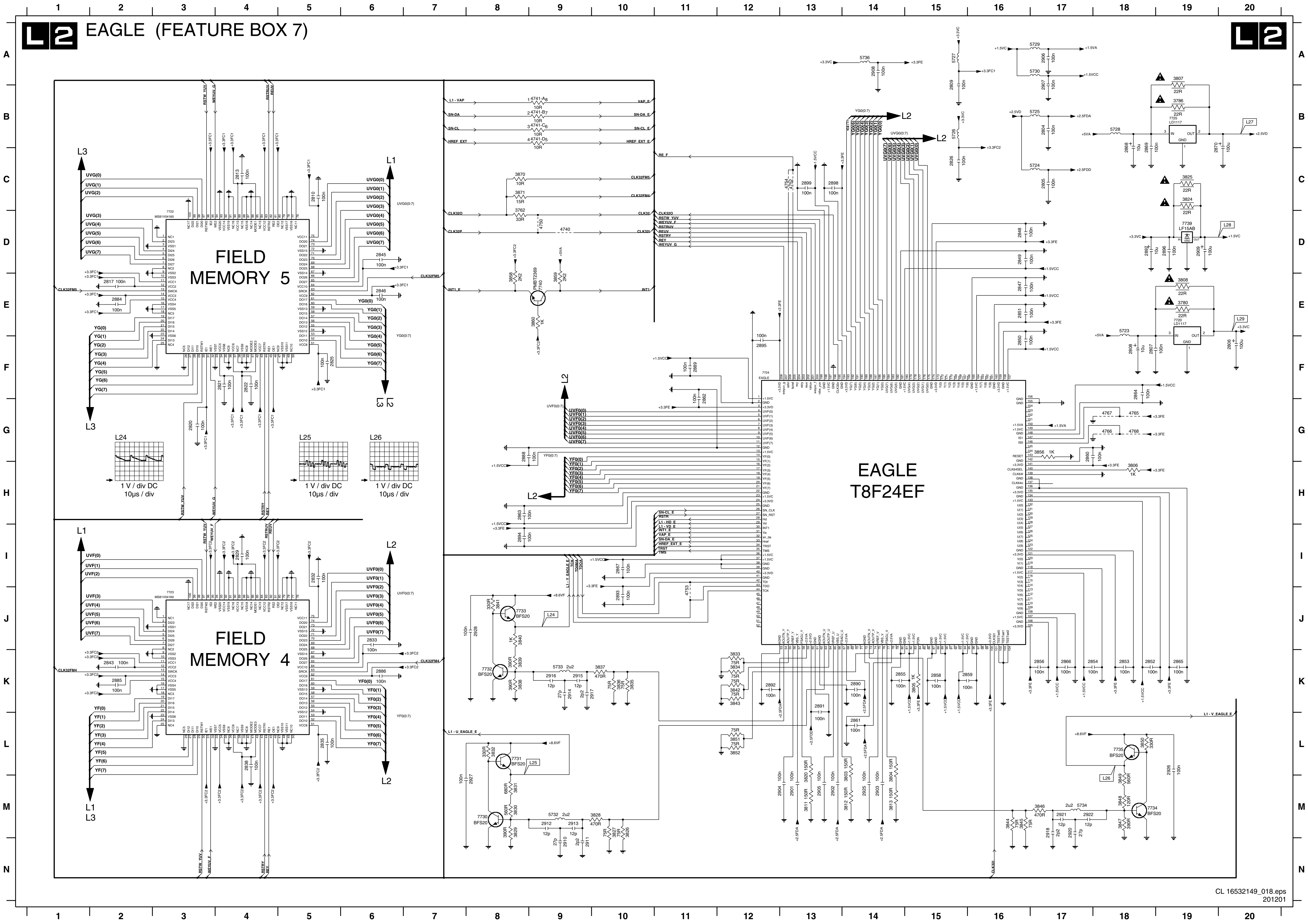
3739	M18
3740	I3
3741	I3
3742	J3
3743	I4
3744	I4
3745	J4
3752	D7
3753	D7
3758	G7
3759	I7
3760	L7
3763	K14
3764	F11
3765	F11
3784	M6
3787	E6
3788	D6
3789	D7
3790	E7
3791	C14
3792	C14
3793	B15
3794	C15
3795	C15
3796	C15
3797	C13
3798	B15
3809	L19
3810	M19
3853	B13
3854	C13
3855	B14
3857	K17
3861	A10
3862	B10
3863	K2
3864	N7
3865	B13
3872	N6
3999	M2
4700	D7
4701	G7
4702	F7
4704	L7
4707-A	J14
4707-B	J14
4707-C	K15
4707-D	K15
4708-A	J14
4708-B	J14
4708-C	J15
4708-D	J15
4709-A	I14
4709-B	I14
4709-C	I15
4709-D	I15
4710-A	H14
4710-B	H14
4710-C	I15
4710-D	I15
4711	H15
4725	E4
4726	G5
4727	I2
4728	I2
4729	J2
4730	C8
4731	C8
4732	D8
4733	D8
4734	F6
4735	F6
5700	C3
5701	D3
5702	D3
5703	I17
5704	I17
5705	L17
5706	M17
5707	I4
5708	I4
5709	J4
5710	D8
5711	E8
5712	F7
5713	J17
5714	K6
5715	M19
5731	K18
7700	I2
7701	J2
7702	J2
7703	E3
7704	F3
7705	L18
7706	M18
7711	D9
7712	E8
7713	F8
7714	E16
7727	D6
7728	C14
7729	C15
7736	B13
7741	A10

Feature Box 7 Panel: Eagle


L2 EAGLE (FEATURE BOX 7)
L2
FIELD MEMORY 5
FIELD MEMORY 4
EAGLE T8F24EF
L1
L2
L3
L24
L25
L26
1 V / div DC
10µs / div
1 V / div DC
10µs / div
1 V / div DC
10µs / div
UVG0(0:7)
YG0(0:7)
UVF0(0:7)
YF0(0:7)
CLK32FM5
CLK32FM4
L1 - U_EAGLE_E
L1 - V_EAGLE_E
7733 BFS20
7732 BFS20
7731 BFS20
7730 BFS20
7735 BFS20
7734 BFS20
7740 PMBT2369
7725 LD1117
7720 LD1117
7739 LF15AB
L27
L28
L29
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
A B C D E F G H I J K L M N

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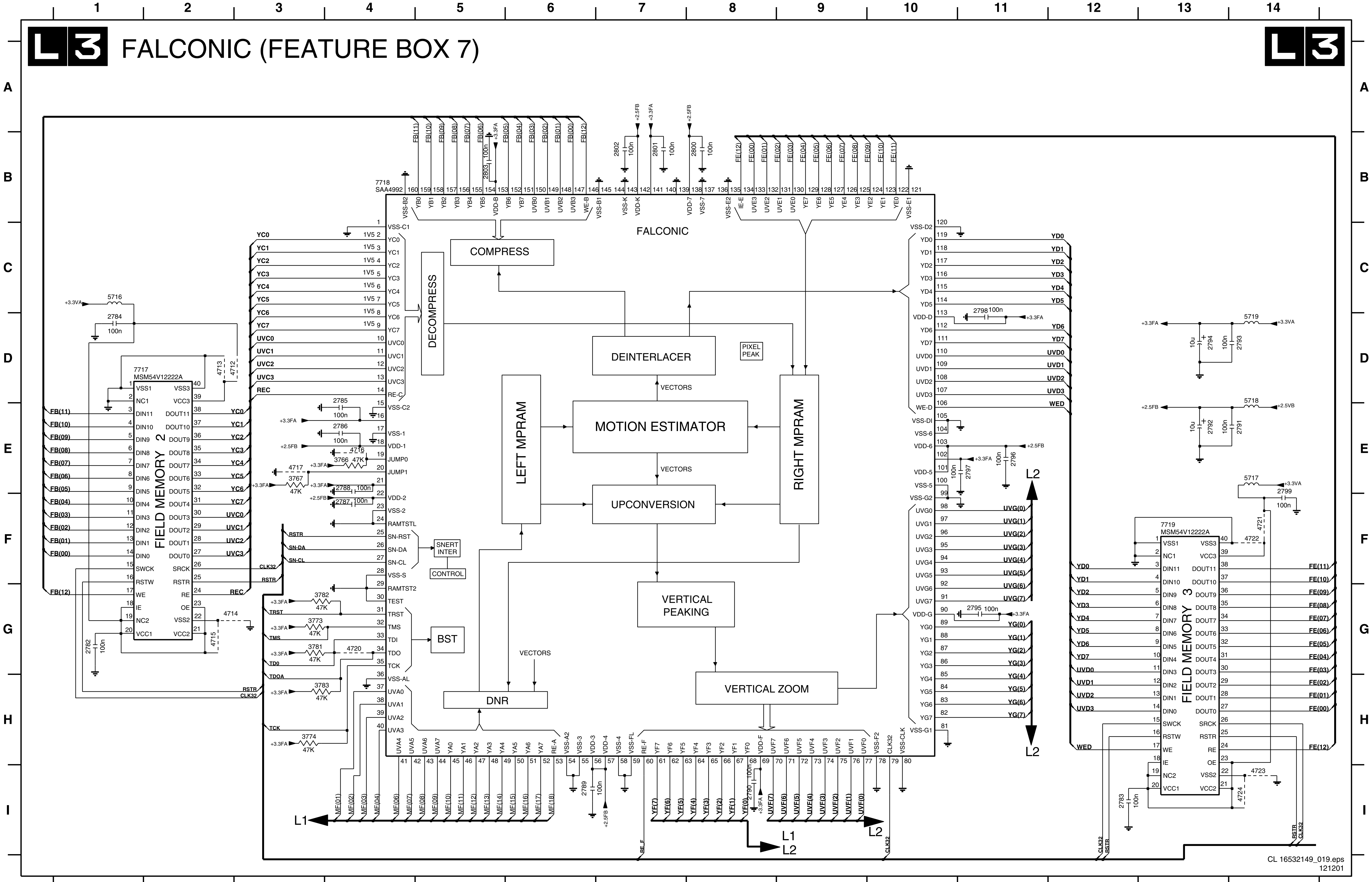
201201

2804	B17
2805	C17
2806	F20
2807	F18
2808	F18
2809	A15
2810	C5
2813	C4
2817	E2
2820	G3
2821	F4
2822	F4
2825	F5
2826	C15
2829	I4
2832	I5
2833	J6
2835	L5
2838	L4
2843	K2
2845	D6
2846	E6
2847	E16
2848	D16
2849	D16
2850	F16
2851	E16
2852	K18
2853	K18
2854	K17
2855	K14
2856	K17
2858	K15
2859	K15
2860	G17
2861	L14
2862	F11
2863	H8
2864	F18
2865	K19
2866	K17
2867	I10
2868	B18
2869	B18
2870	B19
2884	E2
2885	K2
2886	K6
2888	G8
2889	F11
2890	K14
2891	K13
2892	K12
2893	J10
2894	I8
2895	F12
2896	D19
2897	D18
2898	C13
2899	C13
2901	M13
2902	M13
2903	M14
2904	M13
2905	M13
2906	A17
2907	A17
2908	A14
2909	D19
2910	N9
2911	N9
2912	M9
2913	M9
2914	K9
2915	K9
2916	K9
2917	K9
2918	M17
2920	M17
2921	M17
2922	M17
2925	M14
2926	L19
2927	M8
2928	J8
3762	D8
3780	E19
3786	B19
3803	M14
3804	M14
3805	K15
3806	H18
3807	A19
3808	E19
3811	M13
3812	M14
3813	M14
3820	M13
3824	C19
3825	C19
3826	M10
3827	M10
3828	M10
3829	M8
3830	M8
3831	M8
3832	L8
3833	K12
3834	K12
3835	K10
3836	K10
3837	K10
3838	K8
3839	K8
3840	J8
3841	J8
3842	K12
3843	K12
3844	M16
3845	M16
3846	M17
3847	M18
3848	M18
3849	M18
3850	L18
3851	L12
3852	L12
3856	G17
3858	E8
3859	E9
3860	E9
3870	C8
3871	C8
4740	D9
4741-A	B9
4741-B	B9
4741-C	B9
4741-D	B9
4750	D9
4752	C13
4753	J11
4754	C13
4765	G18
4766	G18
4767	G18
4768	G18
5723	E18
5724	C17
5725	B17
5726	B15
5727	A15
5728	B18
5729	A17
5730	A17
5732	M9
5733	K9
5734	M17
5736	A14
7720	E19
7722	D3
7723	J3
7724	F12
7725	B19
7730	M8
7731	L8
7732	K8
7733	J8
7734	M18
7735	L18
7739	D19
7740	E9

Feature Box 7 Panel: Falconic


L3
FALCONIC (FEATURE BOX 7)
L3
7718
SAA4992
FALCONIC
COMPRESS
DECOMPRESS
DEINTERLACER
PIXEL PEAK
VECTORS
MOTION ESTIMATOR
LEFT MPRAM
RIGHT MPRAM
UPCONVERSION
VERTICAL PEAKING
VERTICAL ZOOM
DNR
BST
SNERT INTER
CONTROL
7717
MSM54V12222A
FIELD MEMORY 2
7719
MSM54V12222A
FIELD MEMORY 3
5716
2784
100n
+3.3VA
+3.3FA
+2.5FB
+2.5VB
5717
5718
5719
2799
2798
2795
2796
2797
2791
2792
2793
2794
10u
2800
2801
2802
2803
2785
2786
2787
2788
2789
2790
2782
2783
3766
3767
3773
3774
3781
3782
3783
47K
4712
4713
4714
4715
4716
4717
4720
4721
4722
4723
4724
L1
L2
RSTR
CLK32
RE_F
WED
REC
YC0
YC1
YC2
YC3
YC4
YC5
YC6
YC7
UVC0
UVC1
UVC2
UVC3
FB(00)
FB(01)
FB(02)
FB(03)
FB(04)
FB(05)
FB(06)
FB(07)
FB(08)
FB(09)
FB(10)
FB(11)
FB(12)
FE(00)
FE(01)
FE(02)
FE(03)
FE(04)
FE(05)
FE(06)
FE(07)
FE(08)
FE(09)
FE(10)
FE(11)
FE(12)
YD0
YD1
YD2
YD3
YD4
YD5
YD6
YD7
UVD0
UVD1
UVD2
UVD3
UVG(0)
UVG(1)
UVG(2)
UVG(3)
UVG(4)
UVG(5)
UVG(6)
UVG(7)
YG(0)
YG(1)
YG(2)
YG(3)
YG(4)
YG(5)
YG(6)
YG(7)
MF(01)
MF(02)
MF(03)
MF(04)
MF(06)
MF(07)
MF(08)
MF(09)
MF(10)
MF(11)
MF(12)
MF(13)
MF(14)
MF(15)
MF(16)
MF(17)
MF(18)
YF(0)
YF(1)
YF(2)
YF(3)
YF(4)
YF(5)
YF(6)
YF(7)
UVF(0)
UVF(1)
UVF(2)
UVF(3)
UVF(4)
UVF(5)
UVF(6)
UVF(7)
RSTR
SN-DA
SN-CL
TRST
TMS
TDO
TDOA
TCK
CL 16532149_019.eps
121201

2782	G1
2783	I12
2784	D1
2785	D4
2786	E4
2787	F4
2788	E4
2789	I6
2790	I8
2791	E14
2792	E13
2793	D14
2794	D13
2795	G11
2796	E11
2797	E11
2798	C11
2799	E14
2800	B8
2801	B7
2802	B7
2803	B5
3766	E4
3767	E3
3773	G3
3774	H3
3781	G3
3782	G3
3783	H3
4712	D3
4713	D2
4714	G2
4715	G2
4716	E4
4717	E3
4720	G4
4721	F14
4722	F14
4723	I14
4724	I14
5716	C1
5717	E14
5718	D14
5719	D14
7717	D1
7718	B4
7719	F13

Layout Feature Box 7 Panel (Top View)

0361	C4
0362	C2
1701	C3
2700	C2
2701	C2
2702	C2
2703	C2
2704	C2
2705	C2
2706	C2
2707	C2
2708	C2
2709	B1
2710	B1
2712	B1
2713	C5
2714	C4
2715	C2
2716	C4
2717	C4
2718	C3
2720	C3
2722	C4
2723	C2
2724	C2
2725	A1
2726	A1
2727	A2
2728	A1
2730	B1
2731	C3
2733	C3
2734	C3
2736	C3
2737	C3
2739	C3
2740	C2
2742	C3
2745	B1
2747	C2
2748	C2
2749	C1
2750	C1
2751	C2
2752	C2
2753	C3
2754	B3
2756	C3
2760	B3
2761	B3
2762	B3
2763	B2
2764	B2
2765	B2
2767	A2
2769	A2
2773	B2
2775	B3
2783	A5
2785	A3
2786	A3
2787	A3
2788	A3
2790	B4
2792	A4
2794	A3
2796	A4
2800	A3
2802	A3
2805	C4
2806	A5
2807	A5
2808	A5
2809	A5
2810	A5
2813	A4
2817	A4
2820	B4
2821	B4
2822	B4
2825	B5
2826	B4
2829	B4
2832	B4
2835	B3
2838	B3
2843	B4
2847	B5
2849	B5
2850	B5
2851	B5
2852	B5
2855	C5
2856	C5
2858	C5
2859	C5
2860	B5
2861	C5
2864	B5
2865	B5
2866	C5
2867	C4
2868	C4
2870	C4
2871	C1
2872	C1
2884	A4
2885	B4
2889	B4
2890	C5
2891	C4
2892	C4
2893	C4
2894	B4
2895	B4
2897	A5
2899	B4
2900	A2
2906	B5
2907	B5
2908	B4
2909	A5
2910	C5
2911	C5
2912	C5
2913	C5
2914	C4
2915	C4
2916	C4
2917	C4
2918	C5
2920	C5
2921	C5
2922	C5
2923	C5
2924	C5
2926	C5
2927	C5
2928	C4
3700	C2
3701	C2
3702	C2
3703	C2
3704	C2
3705	C2
3706	C2
3707	C2
3708	C2
3709	C5
3710	C4
3711	C4
3713	C3
3715	C3
3716	C3
3718	C3
3719	C3
3721	C3
3722	C4
3723	C4
3726	C4
3728	C4
3729	C2
3730	C2
3731	C2
3732	C2
3733	C2
3734	C2
3735	C2
3737	A1
3739	A1
3740	C3
3742	C3
3743	C3
3745	C3
3752	C1
3753	C2
3758	C2
3764	B2
3767	A3
3774	A3
3780	A5
3782	A3
3783	A3
3786	B4
3787	C1
3788	C1
3789	C1
3790	C1
3791	C1
3792	C1
3793	C1
3794	C1
3795	C1
3796	C1
3797	C1
3798	C1
3806	B5
3807	B4
3808	A5
3809	A1
3810	A1
3824	A5
3825	A5
3829	C5
3830	C5
3831	C5
3832	C5
3833	C4
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3835	C4
3836	C4
3837	C4
3838	C4
3839	C4
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3844	C5
3845	C5
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3854	C1
3855	C1
3857	B5
3858	B3
3859	B3
3860	B3
3863	C4
3865	C1
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4700	C1
4701	C2
4707	B3
4708	B3
4709	B3
4710	B3
4711	B2
4715	A2
4717	A3
4723	A5
4724	
4726	
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4733	
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7700	
7702	
7703	
7704	
7705	
7706	
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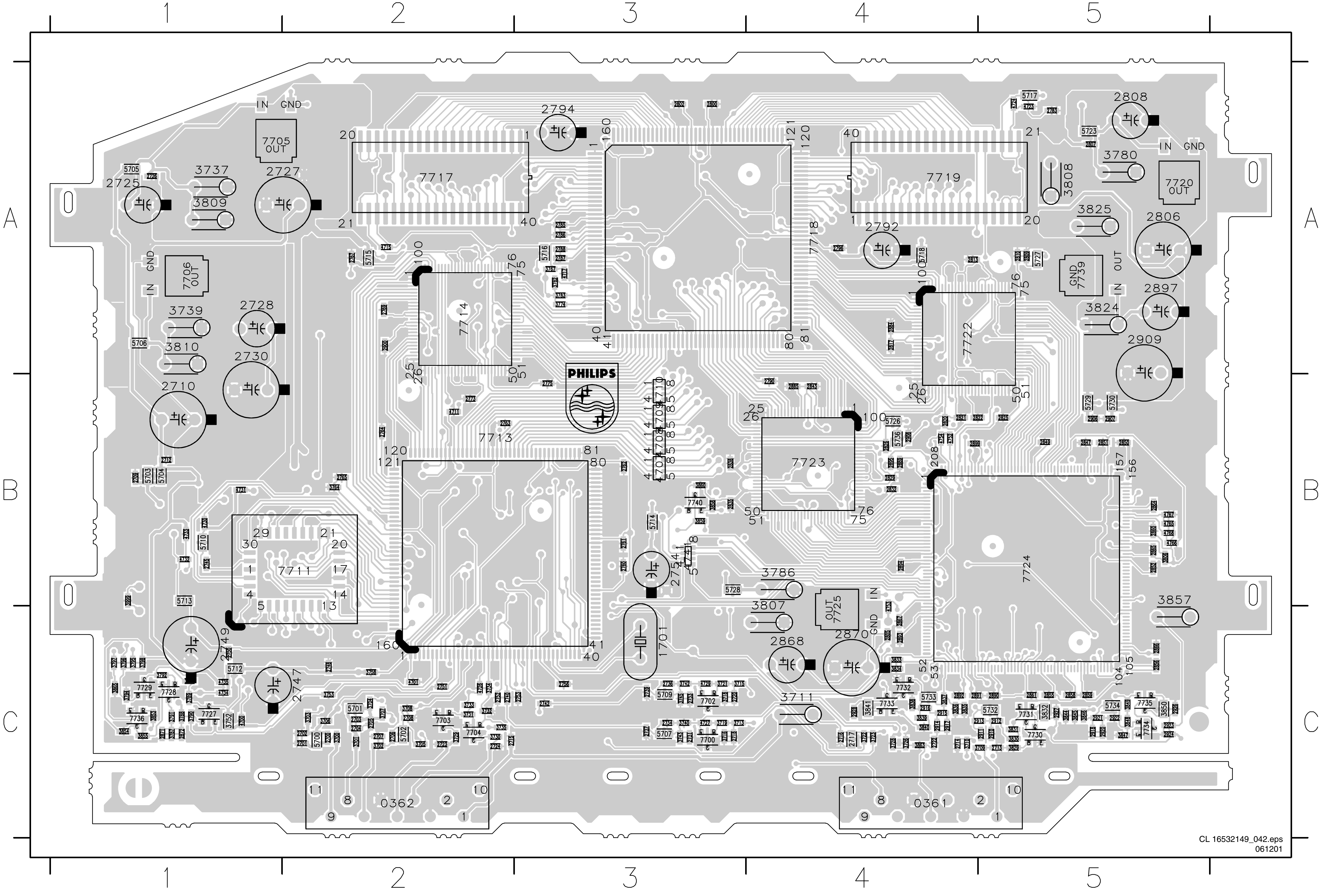
1
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3
4
5
A
B
C
IN GND
7705 OUT
2725
5705
3737
3809
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7717
20
21
40
2794
160
1
7718
121
120
80
81
40
41
7719
2808
3780
3808
IN GND
7720 OUT
3825
2806
2792
7706 OUT
GND IN
3739
3810
2728
2730
2710
7714
100
76
75
25
26
50
51
PHILIPS
7713
7722
2897
3824
2909
GND 7739 OUT
7723
7724
208
157
156
104
105
52
53
3857
7711
29
30
21
20
17
14
13
5
4
2749
2747
1701
3786
3807
2868
2870
7725 OUT
3711
7729
7728
7727
7736
7703
7704
7702
7700
7733
7732
7731
7730
7735
7734
0362
0361
11
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Layout Feature Box 7 Panel (Bottom View)

2719	C3
2721	C2
2729	A5
2732	C3
2735	C4
2738	C4
2741	C4
2746	B5
2755	B3
2757	C4
2758	C3
2759	C3
2766	B4
2777	A4
2778	A4
2779	A4
2781	A4
2782	A4
2784	A4
2789	A3
2791	A2
2793	A4
2795	A3
2797	A3
2798	A3
2799	A2
2801	A3
2803	A3
2804	C2
2833	B3
2845	A2
2846	A2
2848	B1
2853	B1
2854	C1
2862	B2
2863	B2
2869	C3
2886	B2
2888	B2
2896	A1
2898	B2
2901	C2
2902	C2
2903	C2
2904	C2
2905	C2
2925	C2
2929	B4
3714	C3
3717	C3
3720	C3
3724	C3
3725	C2
3727	C2
3741	C3
3744	C3
3759	C4
3760	C3
3762	B2
3763	B3
3765	B4
3766	A4
3773	A4
3781	A4
3784	C4
3803	C2
3804	C2
3805	C1
3811	C2
3812	C2
3813	B2
3820	C2
3826	C2
3827	C2
3828	C2
3842	C2
3843	B2
3851	B2
3852	C2
3856	B1
3861	B4
3862	B4
3864	B3
3870	B2
3871	B2
3872	B3
4702	C4
4704	C4
4712	A4
4713	A4
4714	A4
4716	A4
4720	A3
4721	A2
4722	A2
4725	C4
4728	C3
4740	B3
4750	B3
5708	C4
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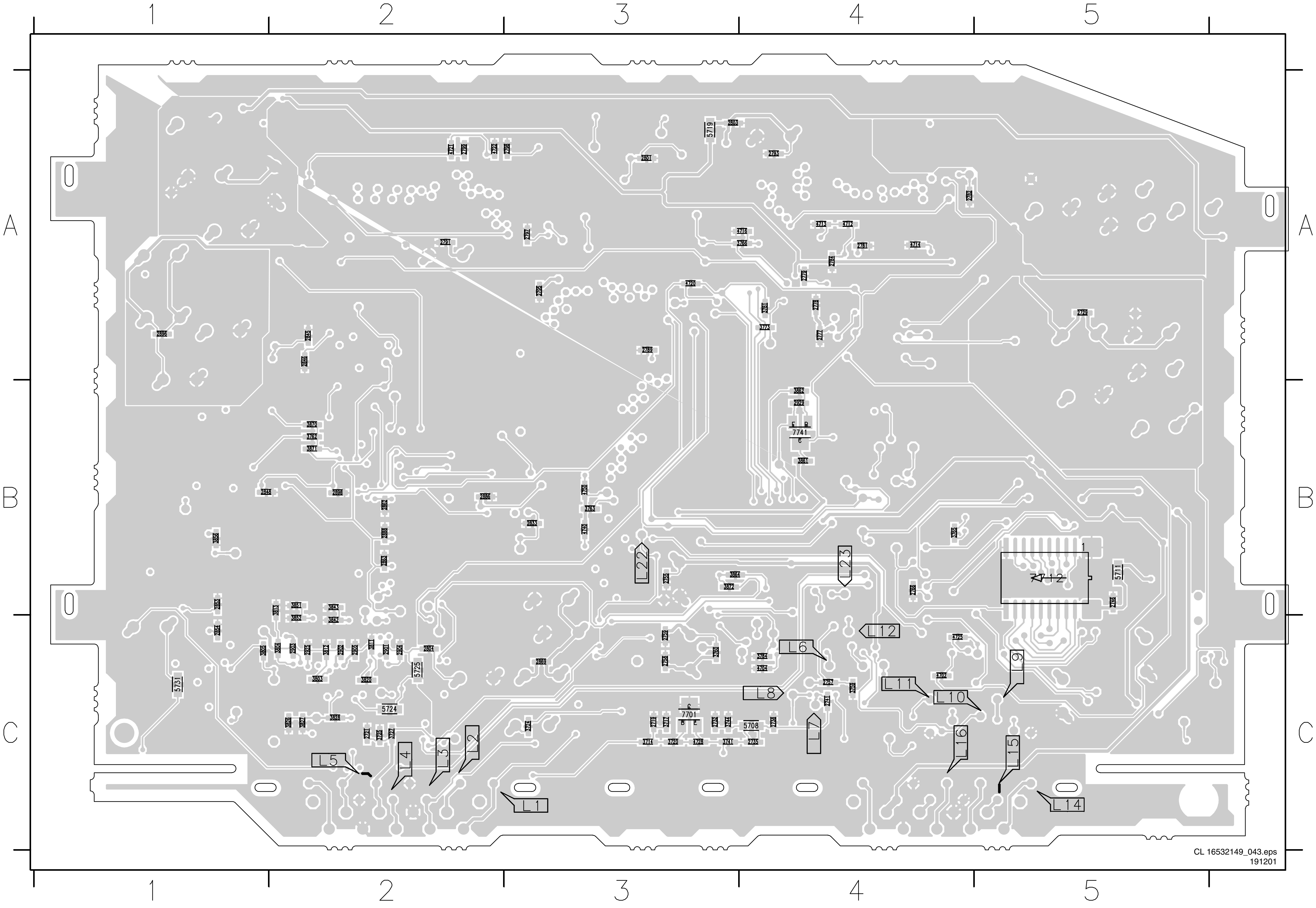
5719	A3
5724	C2
5725	C2
5731	C1
7701	C3
7712	C5
7741	B4


1
2
3
4
5
A
B
C
5719
7741
7712
5711
5731
5725
5724
7701
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L1
L2
L3
L4
L5
L6
L7
L8
L9
L10
L11
L12
L14
L15
L16
L22
L23
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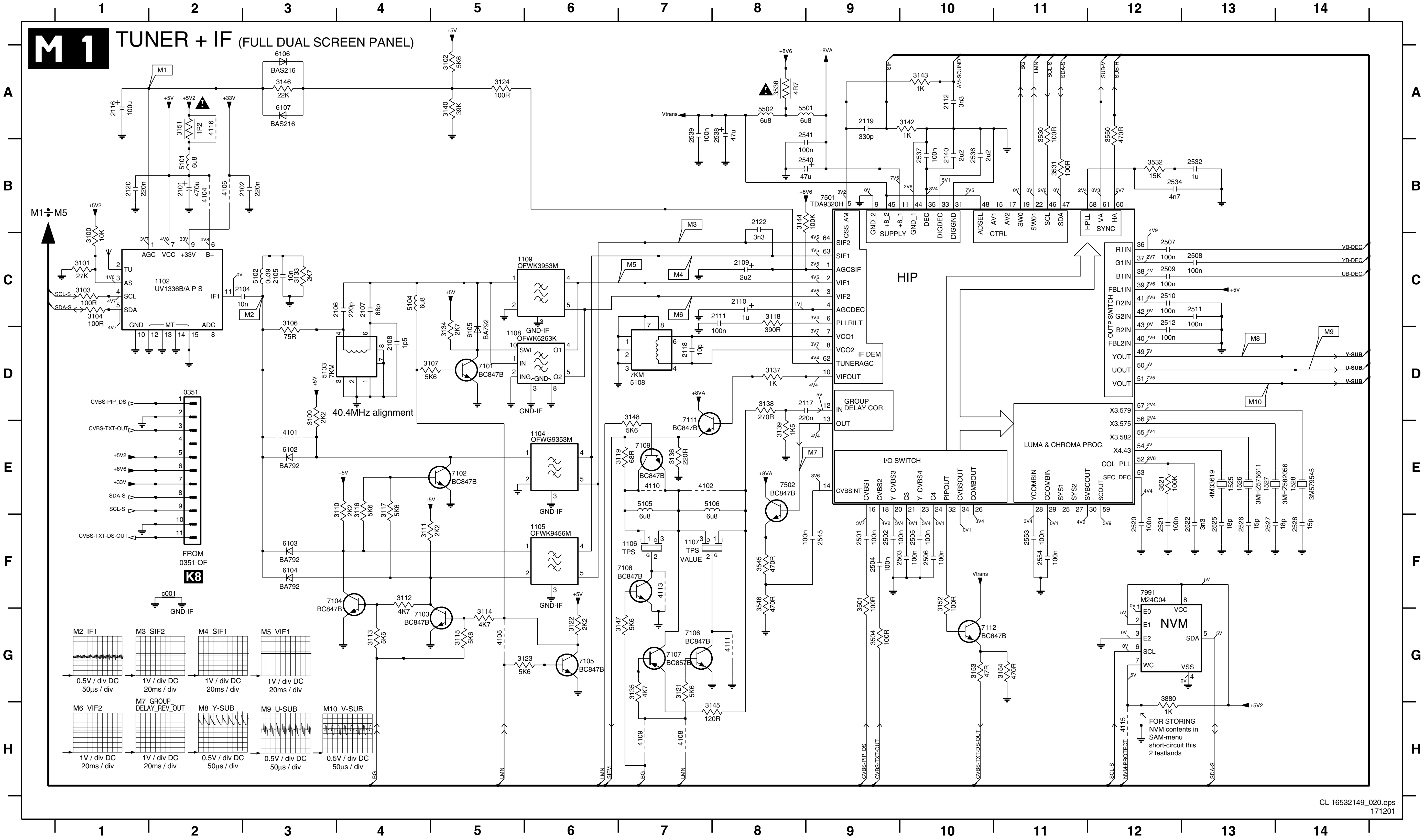
191201

FDS Module: Tuner and IF (Full Dual Screen)

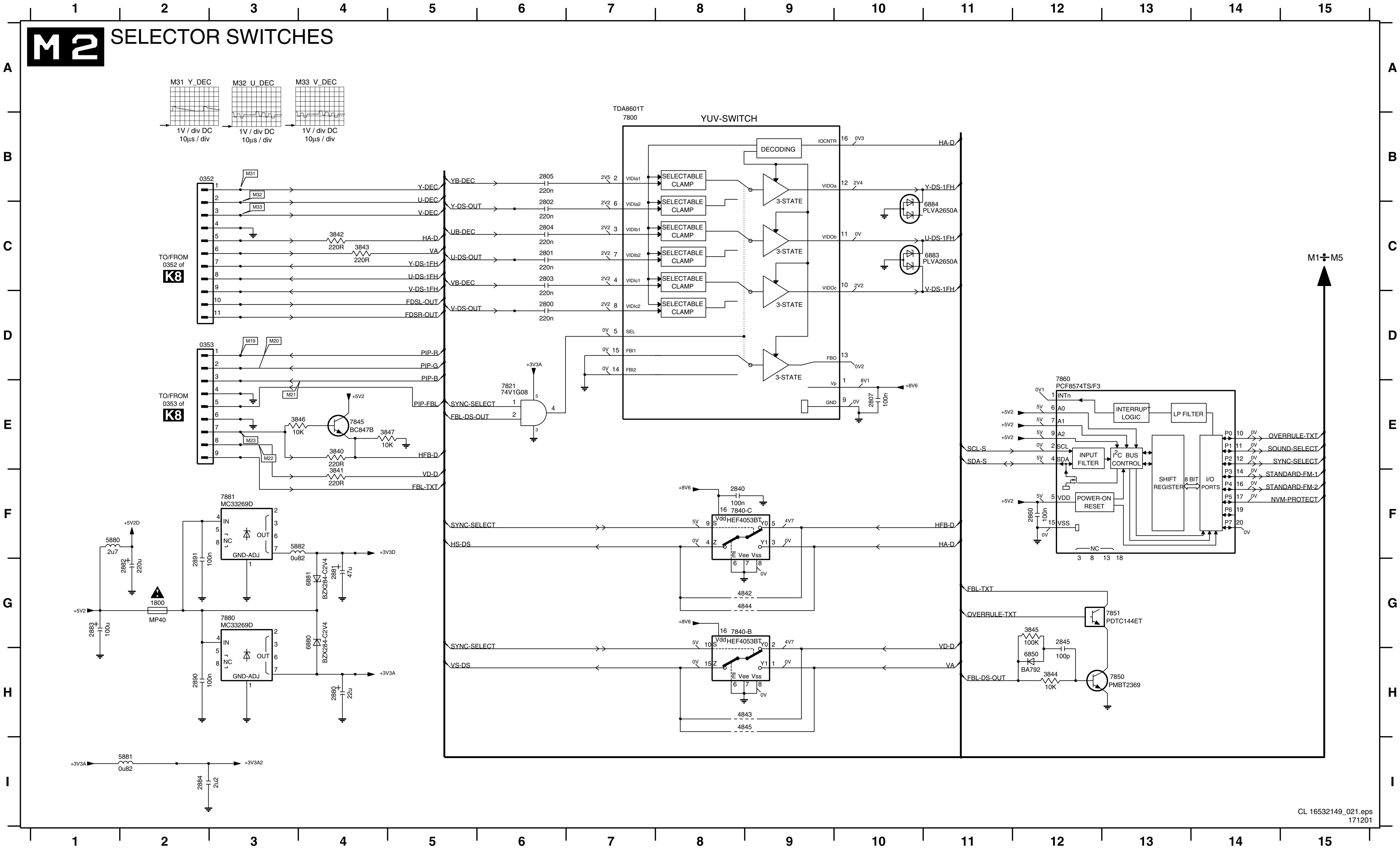
0351	D2
1102	C2
1104	E6
1105	F6
1106	F7
1107	F7
1108	D5
1109	C5
1525	E13
1526	E13
1527	E13
1528	E14
2101	B2
2102	B3
2104	C2
2105	C3
2106	C4
2107	C4
2108	D4
2109	C8
2110	C8
2111	C8
2112	A10
2116	A1
2117	D8
2118	D7
2119	A9
2120	B1
2122	B8
2140	B10
2501	F9
2502	F9
2503	F10
2504	F9
2505	F10
2506	F10
2507	C12
2508	C13
2509	C12
2510	C12
2511	C13
2512	C12
2520	F12
2521	F12
2522	F13
2525	F13
2526	F13
2527	F13
2528	F14
2532	B13
2534	B12
2536	B10
2537	B10
2538	A8
2539	A7
2540	B8
2541	A8
2545	F9
2553	F11
2554	F11
3100	C1
3101	C1
3102	A4
3103	C1
3104	C1
3106	C3
3107	D5
3109	D3
3110	E4
3111	F4
3112	F4
3113	G4
3114	G5
3115	G5
3116	E4
3117	E4
3118	C8
3119	E7
3121	G7
3122	G6
3123	G6
3124	A5
3133	C3
3134	D5
3135	G7
3136	E7
3137	D8
3138	D8
3139	E8
3140	A4
3142	A10
3143	A10
3144	B8
3145	H8
3146	A3
3147	G7
3148	D7
3151	A2
3152	F10
3153	G10
3154	G11
3501	F9
3504	G9
3521	E12
3530	A11
3531	B11
3532	B12
3538	A8
3545	F8
3546	F8
3550	A12
3880	G12
4101	E3
4102	E7
4104	B2
4105	G5
4106	B2
4108	H7
4109	H7
4110	E7
4111	G8
4113	F7
4115	H12
4116	A2
5101	B2
5102	C3
5103	D3
5104	C4
5105	E7
5106	E7
5108	D7
5501	A8
5502	A8
6102	E3
6103	F3
6104	F3
6105	D5
6106	A3
6107	A3
7101	D5
7102	E5
7103	G4
7104	F4
7105	G6
7106	G7
7107	G7
7108	F6
7109	E7
7111	E7
7112	G10
7501	B9
7502	E8
7991	F12
c001	F1



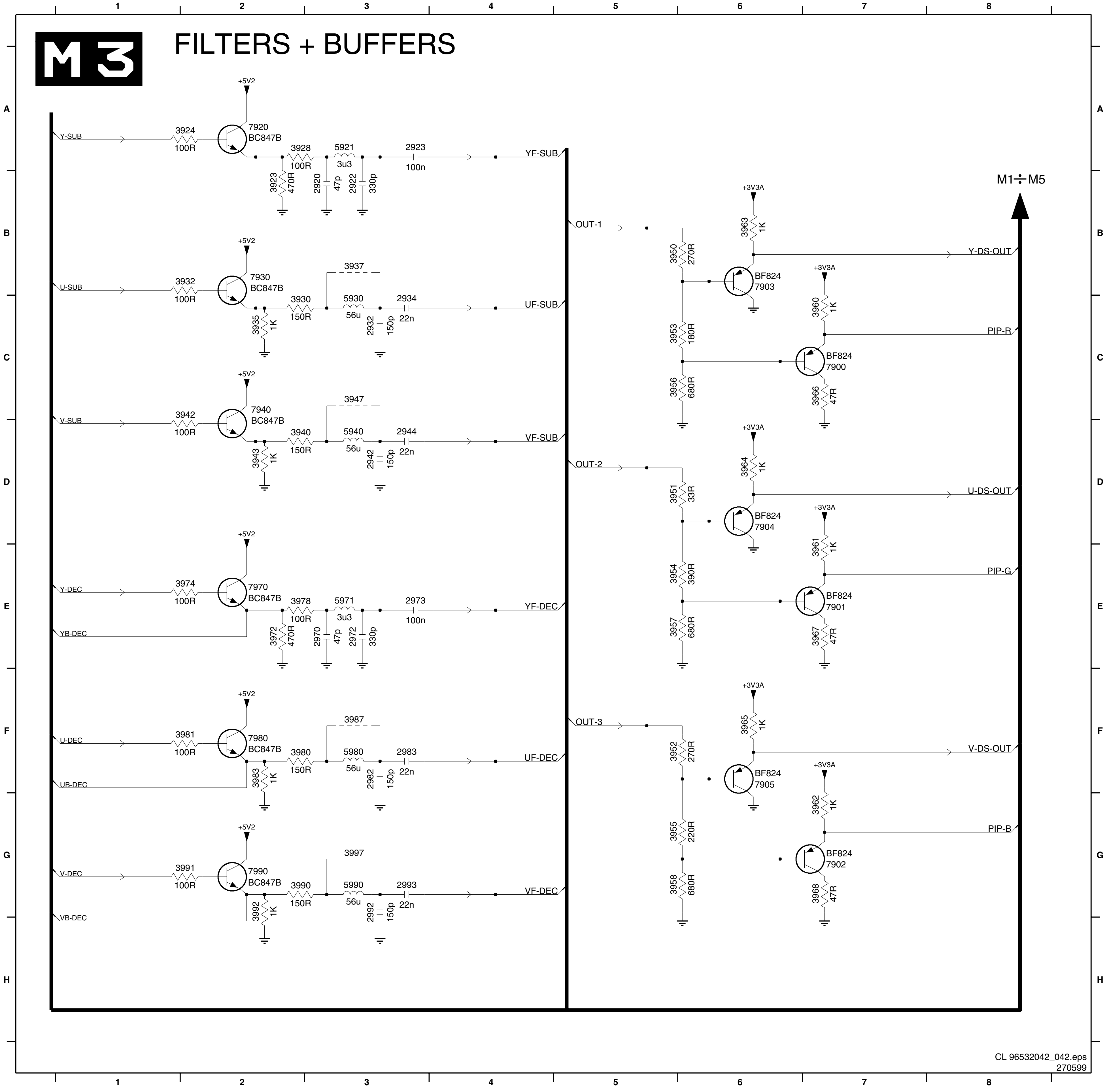
M 1
TUNER + IF (FULL DUAL SCREEN PANEL)
M1 ÷ M5
1102
UV1336B/A P S
AGC VCC +33V B+
TU
AS
SCL
SDA
GND MT ADC
IF1
1109
OFWK3953M
1108
OFWK6263K
SWI IN ING GND O1 O2
GND-IF
1104
OFWG9353M
1105
OFWK9456M
7KM
40.4MHz alignment
7KM
5108
0351
CVBS-PIP_DS
CVBS-TXT-OUT
+5V2
+8V6
+33V
SDA-S
SCL-S
CVBS-TXT-DS-OUT
FROM
0351 OF
K8
c001
GND-IF
7501
TDA9320H
HIP
SUPPLY
CTRL
SYNC
QSS_AM
GND_2 +8_2 +8_1 GND_1 DEC DIGDEC DIGGND
ADSEL AV1 AV2 SW0 SW01 SCL SDA
HPLL VA HA
SIF2 SIF1 AGCSIF VIF1 VIF2 AGCDEC PLLRILT VCO1 VCO2 TUNERAGC VIFOUT
IF DEM
GROUP DELAY COR.
IN OUT
I/O SWITCH
CVBSINT CVBS1 CVBS2 Y_CVBS3 C3 Y_CVBS4 C4 PIPOUT CVBSOUT COMBOUT
OUTP SWITCH
R1IN G1IN B1IN FBL1IN R2IN G2IN B2IN FBL2IN YOUT UOUT VOUT
LUMA & CHROMA PROC.
X3.579 X3.575 X3.582 X4.43 COL_PLL SEC_DEC
YCOMBIN CCOMBIN SYS1 SYS2 SVBCOUT SCOUT
VB-DEC
YB-DEC
UB-DEC
Y-SUB
U-SUB
V-SUB
4M33619
3MHZ575611
3MHZ582056
3M579545
7991
M24C04
NVM
E0 E1 E2 SCL WC_ VCC SDA VSS
FOR STORING NVM contents in SAM-menu short-circuit this 2 testlands
NVM-PROTECT
Vtrans
M2 IF1
0.5V / div DC 50µs / div
M3 SIF2
1V / div DC 20ms / div
M4 SIF1
1V / div DC 20ms / div
M5 VIF1
1V / div DC 20ms / div
M6 VIF2
1V / div DC 20ms / div
M7 GROUP DELAY_REV_OUT
1V / div DC 20ms / div
M8 Y-SUB
0.5V / div DC 50µs / div
M9 U-SUB
0.5V / div DC 50µs / div
M10 V-SUB
0.5V / div DC 50µs / div
BG
LMN
SIFM
SCL-S
SDA-S
SUB-V
SUB-H
AM-SOUND
CVBS-PIP_DS
CVBS-TXT-OUT
CVBS-TXT-DS-OUT
1106 TPS
1107 TPS VALUE
CL 16532149_020.eps
171201

FDS Module: Selector Switches

0352 B3
0353 D3
1800 G2
2800 D6
2801 C6
2802 C6
2803 C6
2804 C6
2805 B6
2807 E10
2840 F8
2845 G12
2860 F12
2880 H4
2881 G4
2882 G2
2883 G1
2884 I2
2890 H2
2891 G2
3840 E4
3841 F4
3842 C4
3843 C4
3844 H12
3845 G12
3846 E3
3847 E4
3999 B2
4842 G8
4843 H8
4844 G8
4845 H8
5880 F1
5881 I2
5882 F3
6850 H12
6880 G4
6881 G4
6883 C11
6884 C11
7800 B7
7821 E6
7840-B G8
7840-C F8
7845 E4
7850 H13
7851 G13
7860 E12
7880 G3
7881 F3


M2
SELECTOR SWITCHES
M31 Y_DEC
M32 U_DEC
M33 V_DEC
1V / div DC
10µs / div
TDA8601T
7800
YUV-SWITCH
DECODING
SELECTABLE CLAMP
3-STATE
IOCNTR
VIDOa
VIDOb
VIDOc
FBO
Vp
GND
SEL
FBI1
FBI2
HA-D
Y-DS-1FH
U-DS-1FH
V-DS-1FH
6884
PLVA2650A
6883
PLVA2650A
M1 ÷ M5
0352
TO/FROM
0352 of
K8
Y-DEC
U-DEC
V-DEC
HA-D
VA
Y-DS-1FH
U-DS-1FH
V-DS-1FH
FDSL-OUT
FDSR-OUT
3842
220R
3843
220R
YB-DEC
Y-DS-OUT
UB-DEC
U-DS-OUT
VB-DEC
V-DS-OUT
2805
2802
2804
2801
2803
2800
220n
0353
TO/FROM
0353 of
K8
M19
M20
M21
M22
M23
PIP-R
PIP-G
PIP-B
PIP-FBL
HFB-D
VD-D
FBL-TXT
+5V2
3846
10K
7845
BC847B
3847
10K
3840
220R
3841
220R
SYNC-SELECT
FBL-DS-OUT
+3V3A
7821
74V1G08
7881
MC33269D
IN
OUT
NC
GND-ADJ
7880
MC33269D
+5V2D
5880
2u7
2882
220u
2891
100n
5882
0u82
6881
BZX284-C2V4
2881
47u
+3V3D
+5V2
1800
MP40
2883
100u
6880
BZX284-C2V4
2890
100n
2880
22u
+3V3A
5881
0u82
+3V3A2
2884
2u2
SYNC-SELECT
HS-DS
+8V6
2840
100n
7840-C
HEF4053BT
Vdd
Vee Vss
HFB-D
HA-D
4842
4844
SYNC-SELECT
VS-DS
7840-B
HEF4053BT
VD-D
VA
4843
4845
2807
100n
7860
PCF8574TS/F3
INTn
A0
A1
A2
SCL
SDA
VDD
VSS
INTERRUPT LOGIC
LP FILTER
INPUT FILTER
I2C BUS CONTROL
SHIFT REGISTER
8 BIT
I/O PORTS
POWER-ON RESET
NC
SCL-S
SDA-S
2860
100n
OVERRULE-TXT
SOUND-SELECT
SYNC-SELECT
STANDARD-FM-1
STANDARD-FM-2
NVM-PROTECT
FBL-TXT
OVERRULE-TXT
7851
PDTC144ET
3845
100K
6850
BA792
2845
100p
3844
10K
FBL-DS-OUT
7850
PMBT2369
CL 16532149_021.eps
171201

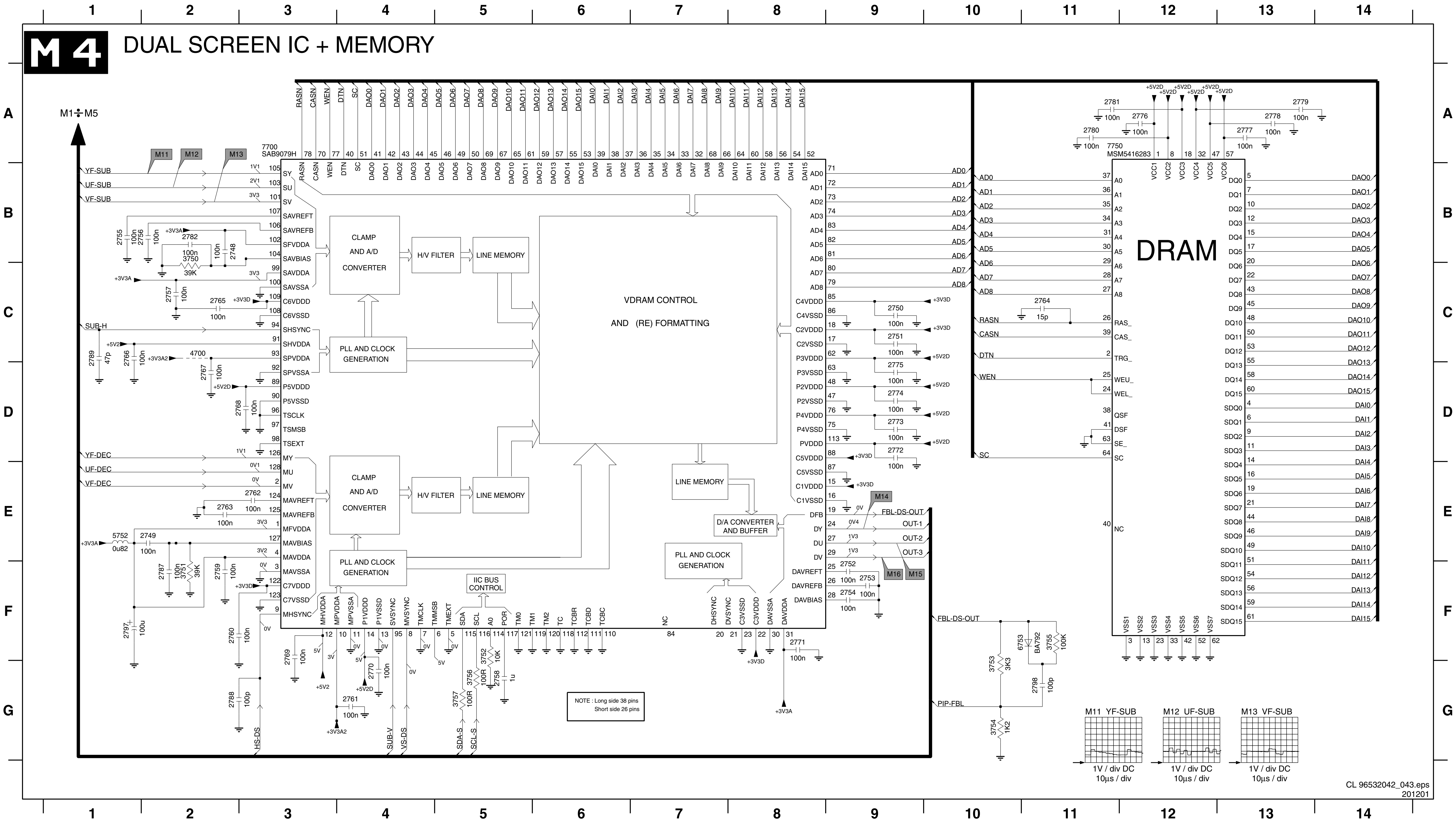
FDS Module: Filters and Buffers


M 3
FILTERS + BUFFERS
Y-SUB
U-SUB
V-SUB
Y-DEC
YB-DEC
U-DEC
UB-DEC
V-DEC
VB-DEC
+5V2
7920 BC847B
7930 BC847B
7940 BC847B
7970 BC847B
7980 BC847B
7990 BC847B
3924 100R
3932 100R
3942 100R
3974 100R
3981 100R
3991 100R
3928 100R
3923 470R
2920 47p
5921 3u3
2922 330p
2923 100n
3930 150R
3935 1K
3937
5930 56u
2932 150p
2934 22n
3940 150R
3943 1K
3947
5940 56u
2942 150p
2944 22n
3978 100R
3972 470R
2970 47p
5971 3u3
2972 330p
2973 100n
3980 150R
3983 1K
3987
5980 56u
2982 150p
2983 22n
3990 150R
3992 1K
3997
5990 56u
2992 150p
2993 22n
YF-SUB
UF-SUB
VF-SUB
YF-DEC
UF-DEC
VF-DEC
OUT-1
OUT-2
OUT-3
+3V3A
3950 270R
3953 180R
3956 680R
3951 33R
3954 390R
3957 680R
3952 270R
3955 220R
3958 680R
3963 1K
3960 1K
3966 47R
3964 1K
3961 1K
3967 47R
3965 1K
3962 1K
3968 47R
BF824 7903
BF824 7900
BF824 7904
BF824 7901
BF824 7905
BF824 7902
Y-DS-OUT
PIP-R
U-DS-OUT
PIP-G
V-DS-OUT
PIP-B
M1÷M5
A B C D E F G H
1 2 3 4 5 6 7 8
CL 96532042_042.eps
270599

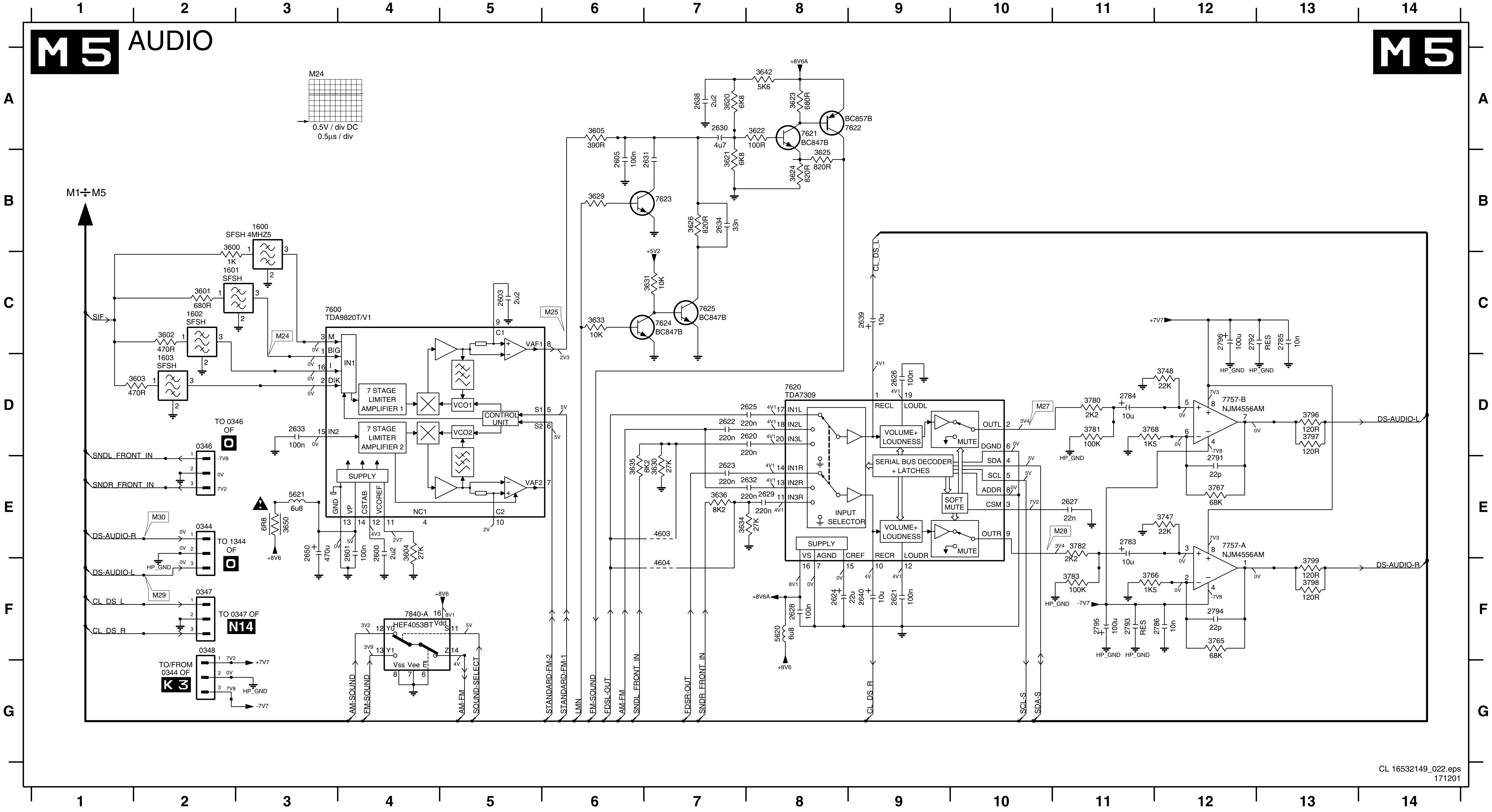
2920	B3
2922	B3
2923	A3
2932	C3
2934	C3
2942	D3
2944	D3
2970	E3
2972	E3
2973	E3
2982	F3
2983	F3
2992	G3
2993	G3
3923	B2
3924	A2
3928	A2
3930	C2
3932	B2
3935	C2
3937	B3
3940	D2
3942	C2
3943	D2
3947	C3
3950	B5
3951	D5
3952	F5
3953	C5
3954	E5
3955	G5
3956	C5
3957	E5
3958	G5
3960	C7
3961	E7
3962	G7
3963	B6
3964	D6
3965	F6
3966	C7
3967	E7
3968	G7
3972	E2
3974	E2
3978	E2
3980	F2
3981	F2
3983	F2
3987	F3
3990	G2
3991	G2
3992	G2
3997	G3
5921	A3
5930	C3
5940	D3
5971	E3
5980	F3
5990	G3
7900	C7
7901	E7
7902	G7
7903	B6
7904	D6
7905	F6
7920	A2
7930	B2
7940	C2
7970	E2
7980	F2
7990	G2

FDS Module: Dual Screen IC and Memory

2748	B2
2749	E2
2750	C9
2751	C9
2752	F9
2753	F9
2754	F9
2755	B1
2756	B2
2757	C2
2758	G5
2759	F2
2760	F2
2761	G4
2762	E3
2763	E2
2764	C11
2765	C2
2766	C1
2767	D2
2768	D3
2769	F3
2770	G4
2771	F8
2772	D9
2773	D9
2774	D9
2775	D9
2776	A12
2777	A13
2778	A13
2779	A13
2780	A11
2781	A11
2782	B2
2787	F2
2788	G2
2789	C1
2797	F1
2798	G11
3750	B2
3751	F2
3752	F5
3753	G10
3754	G10
3755	F11
3756	G5
3757	G5
4700	C2
5752	E1
6753	F11
7700	A3
7750	A11

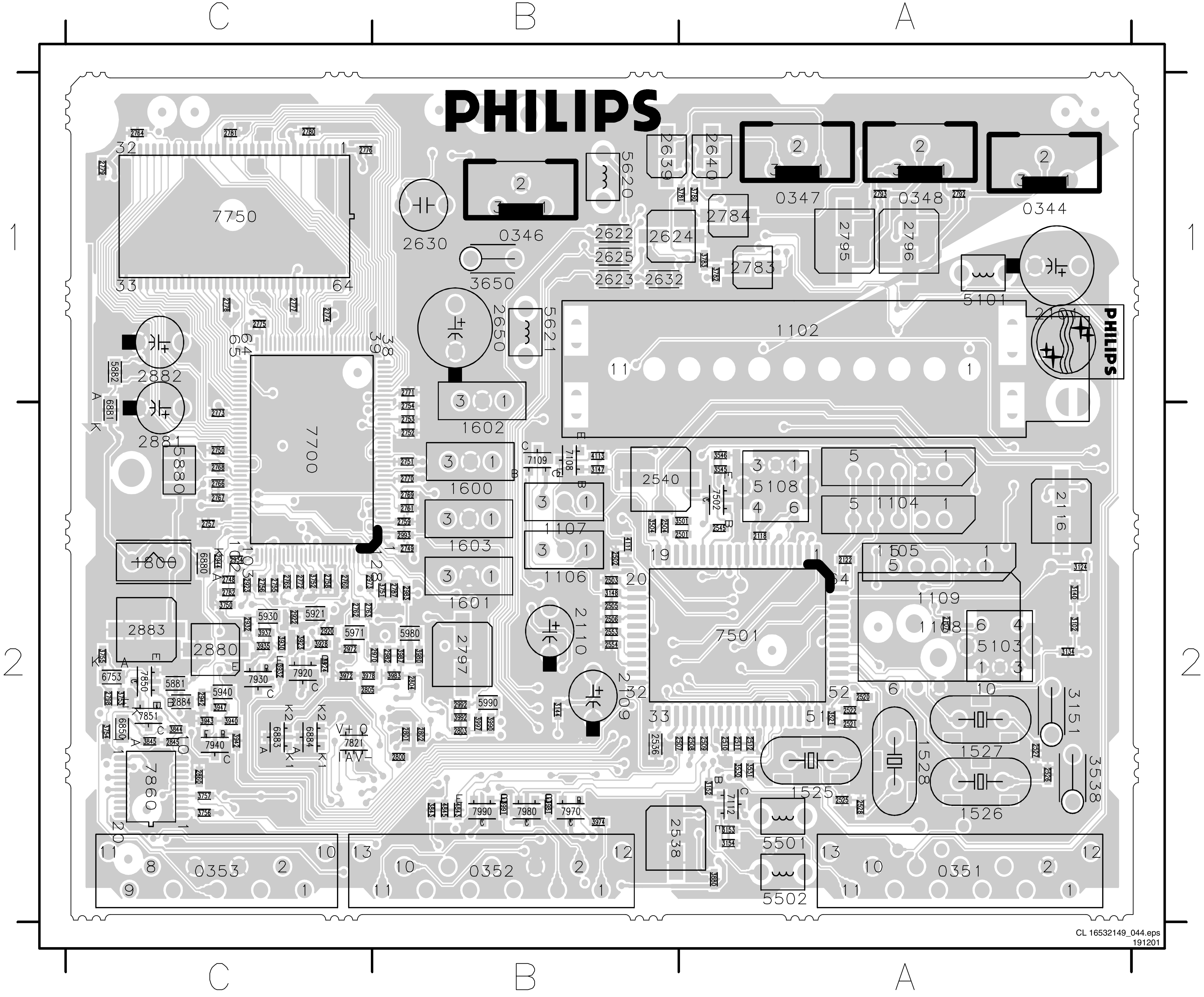

M4
DUAL SCREEN IC + MEMORY
M1÷M5
M11
M12
M13
7700
SAB9079H
YF-SUB
UF-SUB
VF-SUB
SUB-H
YF-DEC
UF-DEC
VF-DEC
CLAMP AND A/D CONVERTER
H/V FILTER
LINE MEMORY
PLL AND CLOCK GENERATION
VDRAM CONTROL AND (RE) FORMATTING
D/A CONVERTER AND BUFFER
IIC BUS CONTROL
7750
MSM5416283
DRAM
FBL-DS-OUT
OUT-1
OUT-2
OUT-3
PIP-FBL
HS-DS
SUB-V
VS-DS
SDA-S
SCL-S
M14
M15
M16
BA792
NOTE : Long side 38 pins
Short side 26 pins
M11 YF-SUB
M12 UF-SUB
M13 VF-SUB
1V / div DC
10µs / div
CL 96532042_043.eps
201201

FDS Module: Audio


M5
AUDIO
M5
M24
0.5V / div DC
0.5µs / div
M1÷M5
1600
SFSH 4MHZ5
1601
SFSH
1602
SFSH
1603
SFSH
3600
1K
3601
680R
3602
470R
3603
470R
SIF
7600
TDA9820T/V1
M
BIG
I
DIK
IN1
IN2
7 STAGE
LIMITER
AMPLIFIER 1
7 STAGE
LIMITER
AMPLIFIER 2
VCO1
VCO2
CONTROL
UNIT
VAF1
VAF2
SUPPLY
GND
VP
CSTAB
VCOREF
NC1
C1
C2
S1
S2
2603
2u2
M25
2633
100n
5621
6u8
6R8
3650
2650
470u
2601
100n
2600
2u2
3604
27K
+8V6
SNDL_FRONT_IN
SNDR_FRONT_IN
DS-AUDIO-R
DS-AUDIO-L
CL_DS_L
CL_DS_R
M30
M29
0346
TO 0346
OF
O
0344
TO 1344
OF
O
0347
TO 0347 OF
N14
0348
TO/FROM
0344 OF
K3
+7V7
HP_GND
-7V7
7840-A
HEF4053BT
Vdd
Vss Vee
AM-SOUND
FM-SOUND
AM-FM
SOUND-SELECT
STANDARD-FM-2
STANDARD-FM-1
LMN
FDSL-OUT
SNDL_FRONT_IN
FDSR-OUT
SNDR_FRONT_IN
3605
390R
2605
100n
2631
3629
7623
3633
10K
7624
BC847B
7625
BC847B
3631
10K
+5V2
2638
2u2
3620
6K8
3642
5K6
+8V6A
3623
680R
2630
4u7
3622
100R
7621
BC847B
7622
BC857B
3621
6K8
3624
820R
3625
820R
3626
820R
2634
33n
CL_DS_L
2639
10u
2626
100n
7620
TDA7309
2625
220n
2622
220n
2620
220n
2623
220n
2632
220n
2629
220n
IN1L
IN2L
IN3L
IN1R
IN2R
IN3R
3635
8K2
3630
27K
3636
8K2
3634
27K
4603
4604
INPUT
SELECTOR
SERIAL BUS DECODER
+ LATCHES
VOLUME+
LOUDNESS
MUTE
SOFT
MUTE
SUPPLY
RECL
LOUDL
OUTL
DGND
SDA
SCL
ADDR
CSM
OUTR
VS
AGND
CREF
RECR
LOUDR
2628
100n
5620
6u8
2624
22u
2640
10u
2621
100n
2627
22n
CL_DS_R
SCL-S
SDA-S
M27
M28
3780
2K2
3781
100K
2784
10u
3768
1K5
3748
22K
7757-B
NJM4556AM
2791
22p
3767
68K
3796
120R
3797
120R
DS-AUDIO-L
2796
100u
2792
RES
2785
10n
+7V7
3782
2K2
3783
100K
2783
10u
3766
1K5
3747
22K
7757-A
NJM4556AM
2794
22p
3765
68K
3799
120R
3798
120R
DS-AUDIO-R
2795
100u
2793
RES
2786
10n
-7V7
1 2 3 4 5 6 7 8 9 10 11 12 13 14
A B C D E F G
CL 16532149_022.eps
171201

0344	E2
0346	D2
0347	F2
0348	F2
1600	B3
1601	C2
1602	C2
1603	D2
2600	E4
2601	E4
2603	C5
2605	B6
2620	D8
2621	F9
2622	D7
2623	E7
2624	F8
2625	D8
2626	D9
2627	E11
2628	F8
2629	E8
2630	A7
2631	B7
2632	E8
2633	D3
2634	B7
2638	A7
2639	C9
2640	F9
2650	E3
2783	E11
2784	D11
2785	C13
2786	F12
2791	E12
2792	C12
2793	F11
2794	F12
2795	F11
2796	C12
3600	B2
3601	C2
3602	C2
3603	D2
3604	E4
3605	A6
3620	A7
3621	B7
3622	A8
3623	A8
3624	B8
3625	B8
3626	B7
3629	B6
3630	E7
3631	C7
3633	C6
3634	E7
3635	E6
3636	E7
3642	A8
3650	E3
3747	E12
3748	D12
3765	F12
3766	F11
3767	E12
3768	D11
3780	D11
3781	D11
3782	E11
3783	F11
3796	D13
3797	D13
3798	F13
3799	F13
4603	E7
4604	F7
5620	F8
5621	E3
7600	C3
7620	D8
7621	A8
7622	A8
7623	B7
7624	C7
7625	C7
7757-A	E12
7757-B	D12
7840-A	F4

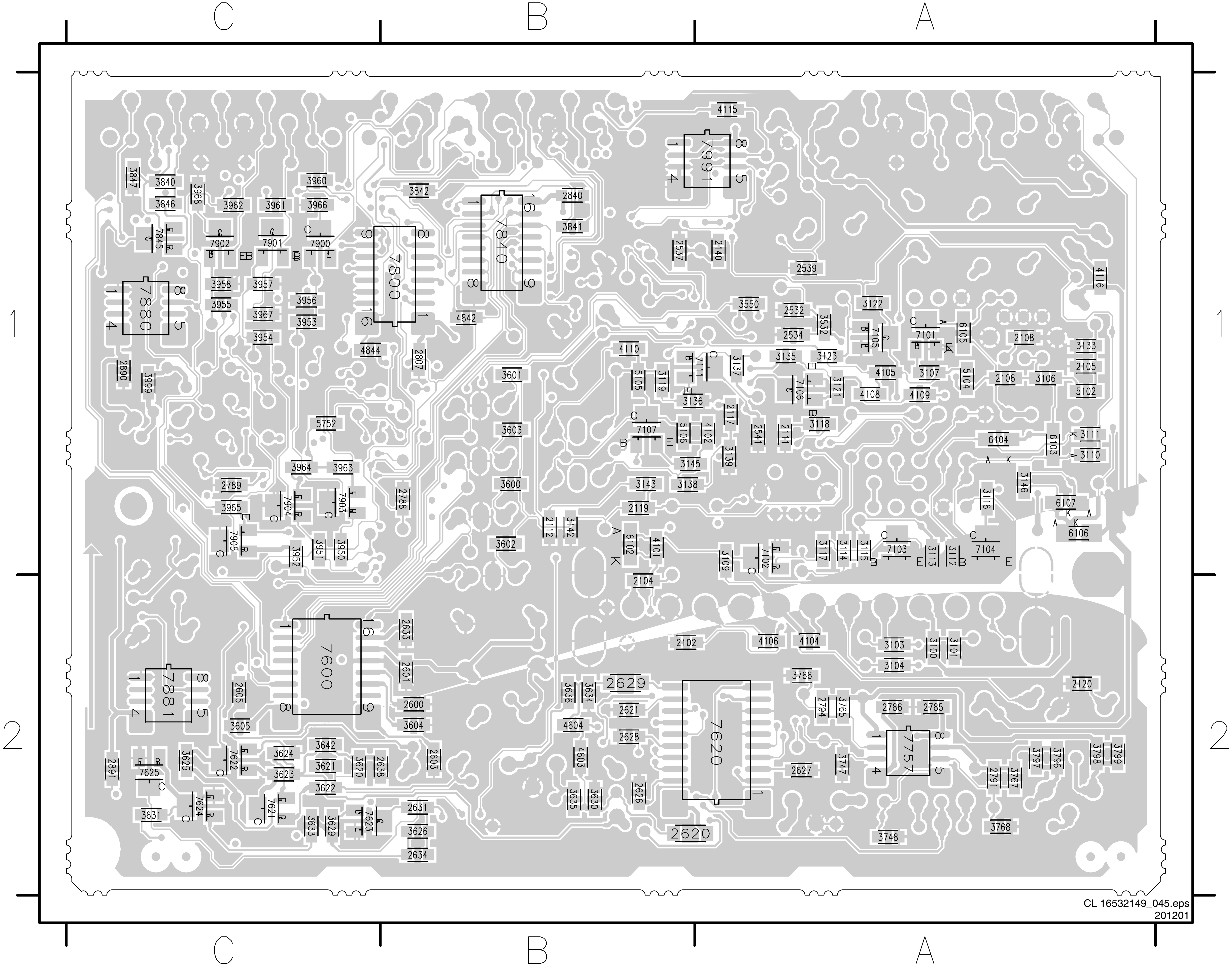
Layout FDS Module (Top View)


C
B
A
1
2
PHILIPS
7750
32
1
33
64
2630
0346
3650
5620
2639
2640
2622
2625
2623
2624
2632
2784
2783
0347
0348
0344
2795
2796
5101
2101
2650
5621
1102
11
65
64
39
38
2882
2881
5882
6881
7700
1602
1600
1603
1601
1107
1106
7109
7108
2540
5108
7502
1104
1105
2116
5880
1800
6880
1109
1108
5103
7501
2110
2109
19
20
33
52
51
3151
3538
1527
1528
1525
1526
2883
2880
5930
5921
5971
5980
2797
7930
7920
6753
7850
5881
2884
5940
7851
6850
7940
6883
6884
7821
7860
5990
7990
7980
7970
2538
5501
5502
0353
0352
0351
11
8
2
10
9
1
13
12

CL 16532149_044.eps
191201

0344	A1	2757	C2	3501	A2	7108	B2
0346	B1	2758	C2	3504	B2	7109	B2
0347	A1	2759	B2	3521	A2	7112	A2
0348	A1	2760	C2	3530	A2	7501	B2
0351	A2	2761	B2	3531	A2	7502	A2
0352	B2	2762	C2	3538	A2	7700	C1
0353	C2	2763	C2	3545	A2	7750	C1
1102	A1	2764	C1	3546	A2	7821	C2
1104	A2	2765	C2	3650	B1	7850	C2
1105	A2	2766	C2	3750	C2	7851	C2
1106	B2	2767	C2	3751	B2	7860	C2
1107	B2	2768	C2	3752	C2	7920	C2
1108	A2	2769	B2	3753	C2	7930	C2
1109	A2	2770	B2	3754	C2	7940	C2
1525	A2	2771	B1	3755	C2	7970	B2
1526	A2	2772	C2	3756	C2	7980	B2
1527	A2	2773	C2	3757	C2	7990	B2
1528	A2	2774	C1	3780	A1		
1600	B2	2775	C1	3781	A1		
1601	B2	2776	C1	3782	A1		
1602	B2	2777	C1	3783	A1		
1603	B2	2778	C1	3843	B2		
1800	C2	2779	C1	3844	C2		
2101	A1	2780	C1	3845	C2		
2107	A2	2781	C1	3880	A2		
2109	B2	2782	C2	3923	C2		
2110	B2	2783	A1	3924	C2		
2116	A2	2784	A1	3928	C2		
2118	A2	2787	B2	3930	C2		
2122	A2	2792	A1	3932	C2		
2501	A2	2793	A1	3935	C2		
2502	B2	2795	A1	3937	C2		
2503	B2	2796	A1	3940	C2		
2504	B2	2797	B2	3942	C2		
2505	B2	2798	C2	3943	C2		
2506	B2	2800	B2	3947	C2		
2507	A2	2801	B2	3972	C2		
2508	A2	2802	B2	3974	B2		
2509	A2	2803	B2	3978	C2		
2510	A2	2804	B2	3980	B2		
2511	A2	2805	C2	3981	B2		
2512	A2	2845	C2	3983	B2		
2520	A2	2860	C2	3987	B2		
2521	A2	2880	C2	3990	B2		
2522	A2	2881	C1	3991	B2		
2525	A2	2882	C1	3992	B2		
2526	A2	2883	C2	3997	B2		
2527	A2	2884	C2	4111	B2		
2528	A2	2920	C2	4113	B2		
2536	B2	2922	C2	4843	B2		
2538	B2	2923	C2	4845	B2		
2540	B2	2932	C2	5101	A1		
2545	A2	2934	C2	5103	A2		
2553	B2	2942	C2	5108	A2		
2554	B2	2944	C2	5501	A2		
2622	B1	2970	B2	5502	A2		
2623	B1	2972	C2	5620	B1		
2624	B1	2973	C2	5621	B1		
2625	B1	2982	B2	5880	C2		
2630	B1	2983	B2	5881	C2		
2632	B1	2992	B2	5882	C1		
2639	A1	2993	B2	5921	C2		
2640	A1	3102	A2	5930	C2		
2650	B1	3124	A2	5940	C2		
2748	C2	3134	A2	5971	C2		
2749	B2	3140	A2	5980	B2		
2750	C2	3144	B2	5990	B2		
2751	B2	3147	B2	6753	C2		
2752	B2	3148	B2	6850	C2		
2753	B2	3151	A2	6880	C2		
2754	B2	3152	A2	6881	C2		
2755	C2	3153	A2	6883	C2		
2756	C2	3154	A2	6884	C2		

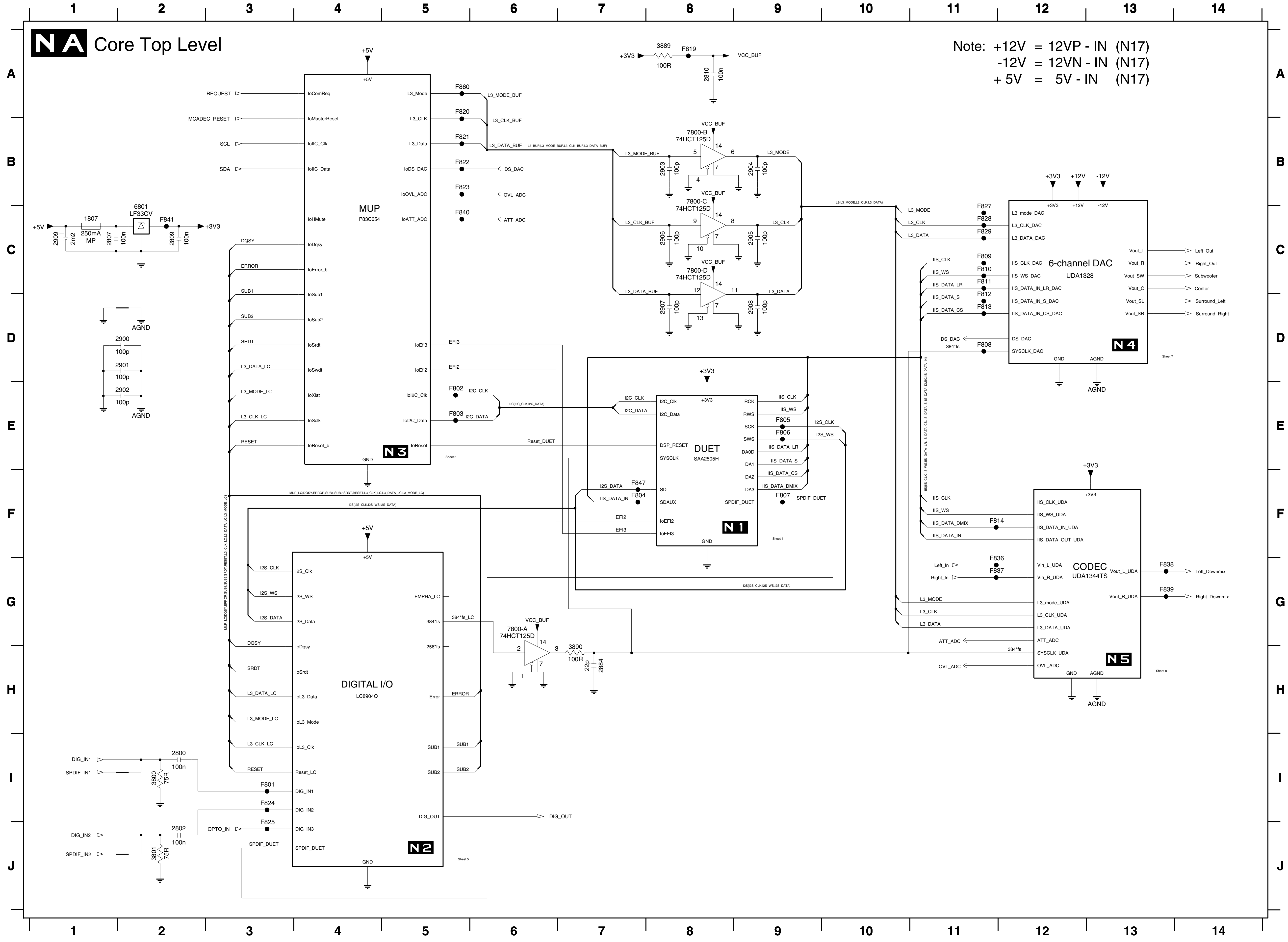
Layout FDS Module (Bottom View)



CL 16532149_045.eps
201201

2102	B2	3602	B1	6104	A1
2104	B2	3603	B1	6105	A1
2105	A1	3604	B2	6106	A1
2106	A1	3605	C2	6107	A1
2108	A1	3620	C2	7101	A1
2111	A1	3621	C2	7102	A1
2112	B1	3622	C2	7103	A2
2117	A1	3623	C2	7104	A2
2119	B1	3624	C2	7105	A1
2120	A2	3625	C2	7106	A1
2140	A1	3626	B2	7107	B1
2532	A1	3629	C2	7111	A1
2534	A1	3630	B2	7600	C2
2537	B1	3631	C2	7620	A2
2539	A1	3633	C2	7621	C2
2541	A1	3634	B2	7622	C2
2600	B2	3635	B2	7623	C2
2601	B2	3636	B2	7624	C2
2603	B2	3642	C2	7625	C2
2605	C2	3747	A2	7757	A2
2620	B2	3748	A2	7800	B1
2621	B2	3765	A2	7840	B1
2626	B2	3766	A2	7845	C1
2627	A2	3767	A2	7880	C1
2628	B2	3768	A2	7881	C2
2629	B2	3796	A2	7900	C1
2631	B2	3797	A2	7901	C1
2633	B2	3798	A2	7902	C1
2634	B2	3799	A2	7903	C1
2638	B2	3840	C1	7904	C1
2785	A2	3841	B1	7905	C1
2786	A2	3842	B1	7991	A1
2788	B1	3846	C1		
2789	C1	3847	C1		
2791	A2	3950	C1		
2794	A2	3951	C1		
2807	B1	3952	C1		
2840	B1	3953	C1		
2890	C1	3954	C1		
2891	C2	3955	C1		
3100	A2	3956	C1		
3101	A2	3957	C1		
3103	A2	3958	C1		
3104	A2	3960	C1		
3106	A1	3961	C1		
3107	A1	3962	C1		
3109	A1	3963	C1		
3110	A1	3964	C1		
3111	A1	3965	C1		
3112	A1	3966	C1		
3113	A1	3967	C1		
3114	A1	3968	C1		
3115	A1	3999	C1		
3116	A1	4101	B1		
3117	A1	4102	A1		
3118	A1	4104	A2		
3119	B1	4105	A1		
3121	A1	4106	A2		
3122	A1	4108	A1		
3123	A1	4109	A1		
3133	A1	4110	B1		
3135	A1	4115	A1		
3136	B1	4116	A1		
3137	A1	4603	B2		
3138	B1	4604	B2		
3139	A1	4842	B1		
3142	B1	4844	C1		
3143	B1	5102	A1		
3145	B1	5104	A1		
3146	A1	5105	B1		
3532	A1	5106	B1		
3550	A1	5752	C1		
3600	B1	6102	B1		
3601	B1	6103	A1		

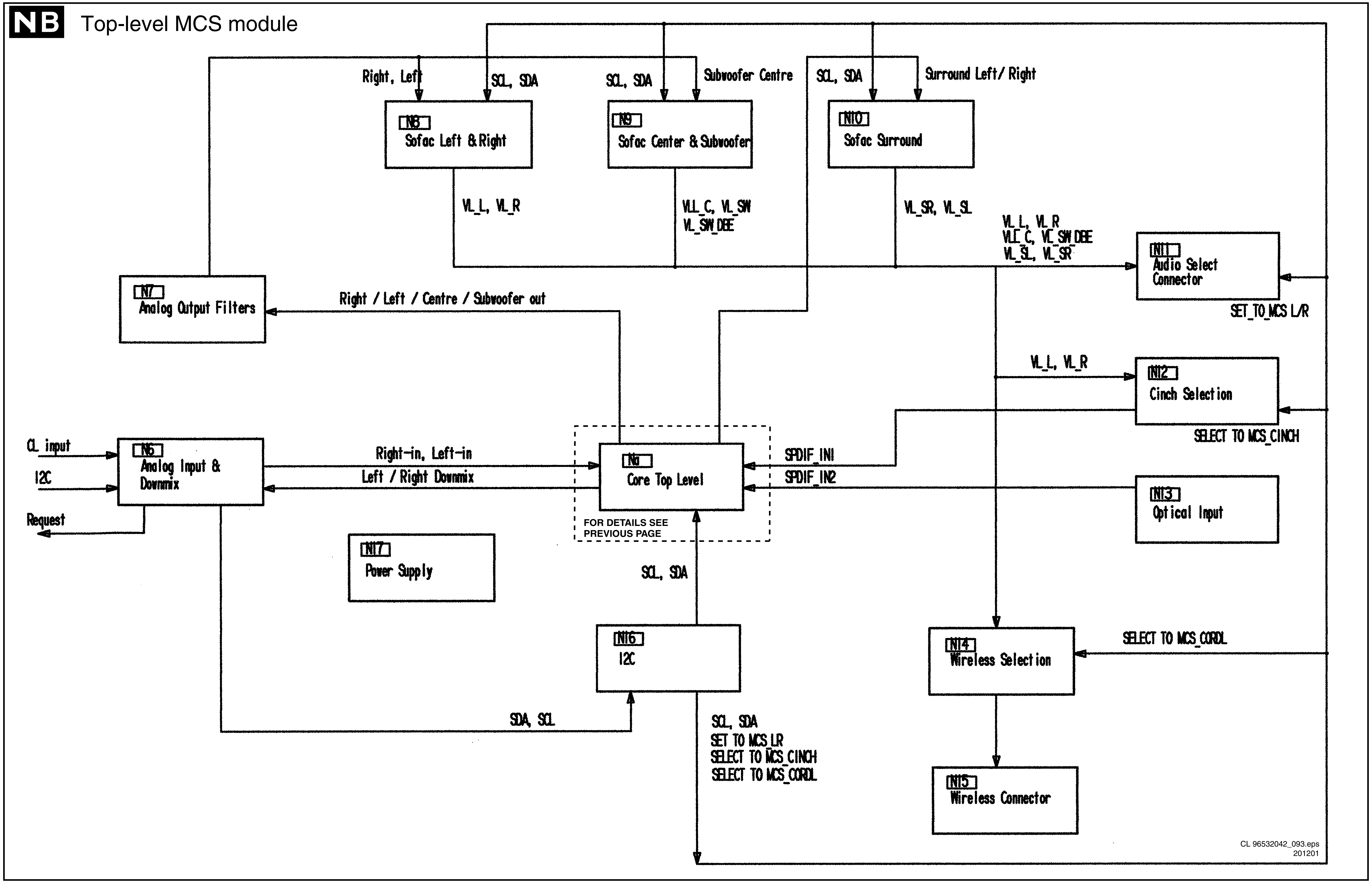
Multi-Channel Sound Module: Core Top Level


NA Core Top Level
Note: +12V = 12VP - IN (N17)
-12V = 12VN - IN (N17)
+ 5V = 5V - IN (N17)
MUP
P83C654
N3
DUET
SAA2505H
N1
6-channel DAC
UDA1328
N4
CODEC
UDA1344TS
N5
DIGITAL I/O
LC8904Q
N2
7800-A 74HCT125D
7800-B 74HCT125D
7800-C 74HCT125D
7800-D 74HCT125D
6801 LF33CV
1807 250mA MP
3889 100R
3890 100R
3800 75R
3801 75R
2800 100n
2802 100n
2900 100p
2901 100p
2902 100p
2884 22p
+5V
+3V3
+12V
-12V
VCC_BUF
AGND
GND
REQUEST
MCADEC_RESET
SCL
SDA
L3_MODE_BUF
L3_CLK_BUF
L3_DATA_BUF
DS_DAC
OVL_ADC
ATT_ADC
L3_MODE
L3_CLK
L3_DATA
Left_Out
Right_Out
Subwoofer
Center
Surround_Left
Surround_Right
Left_In
Right_In
Left_Downmix
Right_Downmix
DIG_IN1
SPDIF_IN1
DIG_IN2
SPDIF_IN2
OPTO_IN
DIG_OUT
I2C_CLK
I2C_DATA
I2S_CLK
I2S_WS
I2S_DATA
IIS_CLK
IIS_WS
IIS_DATA_LR
IIS_DATA_S
IIS_DATA_CS
IIS_DATA_DMIX
IIS_DATA_IN
SPDIF_DUET
Reset_DUET
EFI2
EFI3
384*fs
Sheet 4
Sheet 5
Sheet 6
Sheet 7
Sheet 8
1 2 3 4 5 6 7 8 9 10 11 12 13 14
A B C D E F G H I J

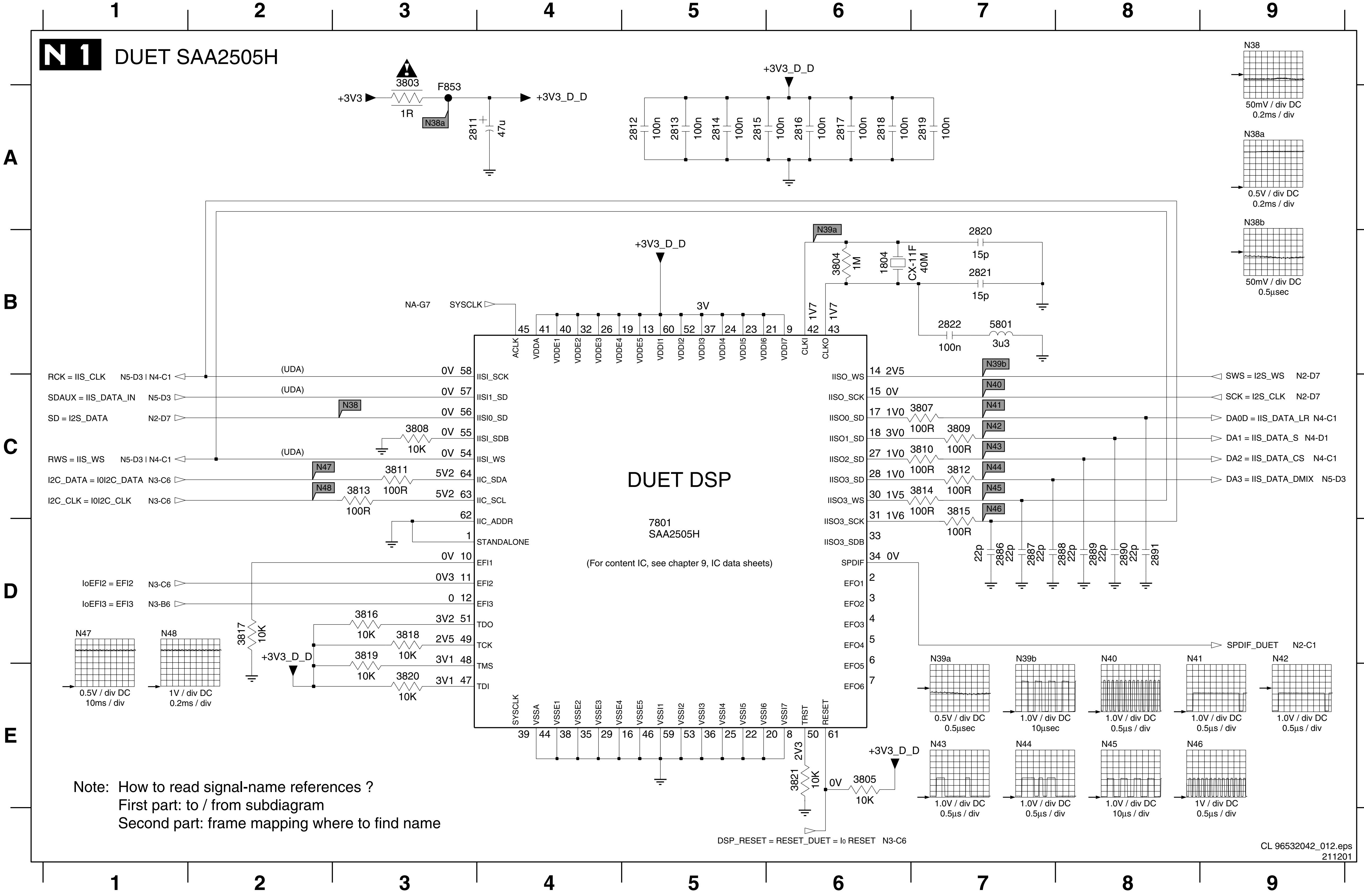
2800	I2
2802	J2
2807	C1
2809	C2
2810	A8
2884	H7
2900	D2
2901	D2
2902	E2
2903	B8
2904	B9
2905	C9
2906	C8
2907	D8
2908	D9
2909	C1
3800	I2
3801	J2
3889	A8
3890	H7
6801	C2
7800-A	G6
7800-B	B8
7800-C	B8
7800-D	C8
F801	I3
F802	E5
F803	E5
F804	F7
F805	E9
F806	E9
F807	F9
F808	D11
F809	C11
F810	C11
F811	C11
F812	D11
F813	D11
F814	F11
F819	A8
F820	A5
F821	B5
F822	B5
F823	B5
F824	I3
F825	J3
F827	C11
F828	C11
F829	C11
F836	G11
F837	G11
F838	G13
F839	G13
F840	C5
F841	A2
F847	F7
F860	A5

CL 96532042_029
200599

Multi-Channel Sound Module: Top Level


NB
Top-level MCS module
Right, Left
SCL, SDA
SCL, SDA
Subwoofer Centre
SCL, SDA
Surround Left/ Right
N8
Sofac Left & Right
N9
Sofac Center & Subwoofer
N10
Sofac Surround
VL_L, VL_R
VLL_C, VL_SW
VL_SW DBE
VL_SR, VL_SL
VL_L, VL_R
VLL_C, VL_SW DBE
VL_SL, VL_SR
N11
Audio Select
Connector
SET_TO_MCS L/R
N7
Analog Output Filters
Right / Left / Centre / Subwoofer out
VL_L, VL_R
N12
Cinch Selection
SELECT TO MCS_CINCH
CL input
I2C
Request
N6
Analog Input &
Downmix
Right-in, Left-in
Left / Right Downmix
Na
Core Top Level
FOR DETAILS SEE
PREVIOUS PAGE
SPDIF_IN1
SPDIF_IN2
N13
Optical Input
N17
Power Supply
SCL, SDA
N16
I2C
SDA, SCL
SCL, SDA
SET TO MCS LR
SELECT TO MCS_CINCH
SELECT TO MCS_CORDL
SELECT TO MCS_CORDL
N14
Wireless Selection
N15
Wireless Connector
CL 96532042_093.eps
201201

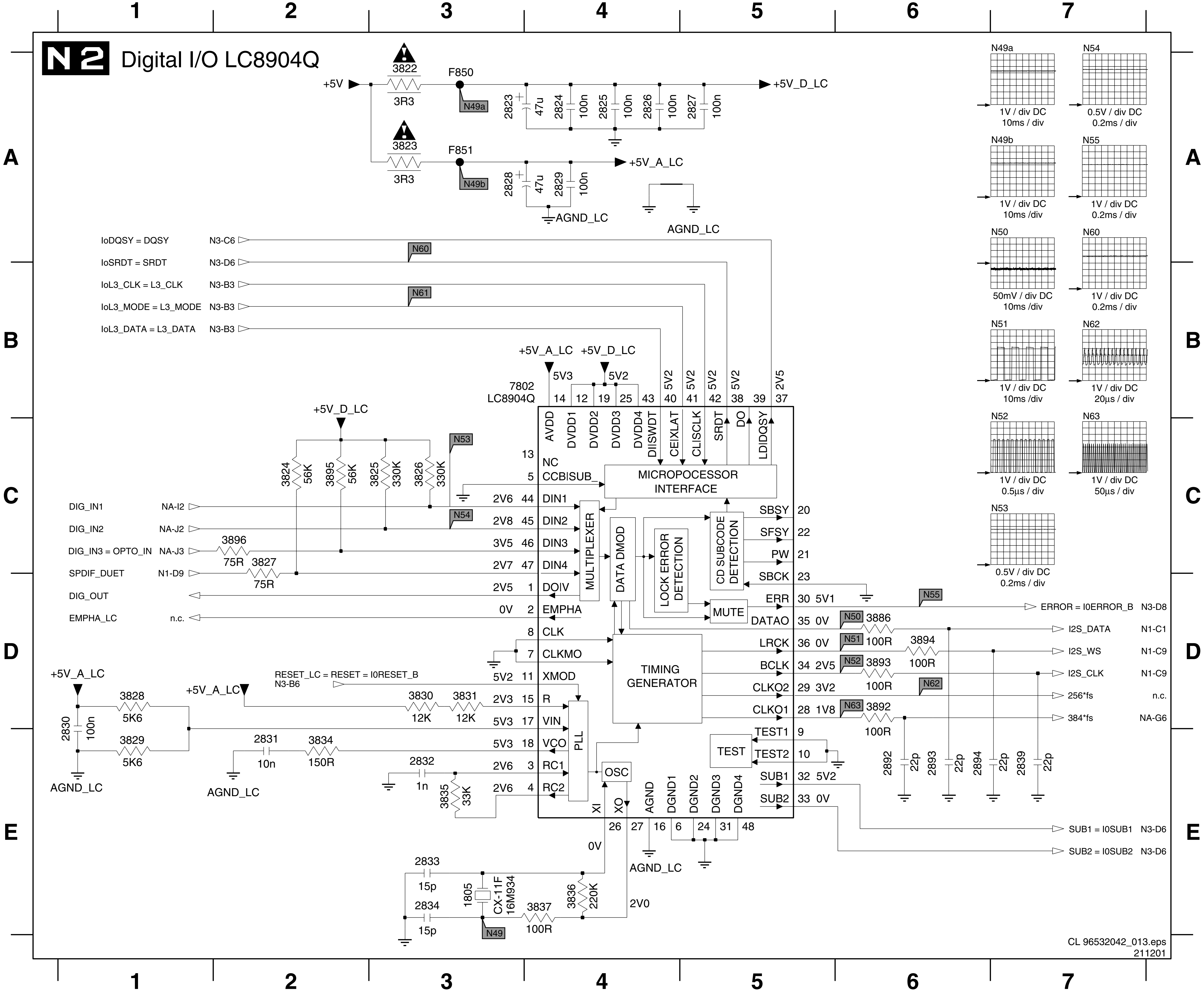
Multi-Channel Sound Module: Duet SAA2505H


N 1
DUET SAA2505H
DUET DSP
7801
SAA2505H
(For content IC, see chapter 9, IC data sheets)
+3V3
3803
1R
F853
N38a
2811
47u
+3V3_D_D
2812 100n
2813 100n
2814 100n
2815 100n
2816 100n
2817 100n
2818 100n
2819 100n
N39a
3804 1M
1804 CX-11F 40M
2820 15p
2821 15p
2822 100n
5801 3u3
NA-G7 SYSCLK
3V
1V7
ACLK
VDDA
VDDE1
VDDE2
VDDE3
VDDE4
VDDE5
VDDI1
VDDI2
VDDI3
VDDI4
VDDI5
VDDI6
VDDI7
CLKI
CLKO
RCK = IIS_CLK N5-D3 | N4-C1
SDAUX = IIS_DATA_IN N5-D3
SD = I2S_DATA N2-D7
RWS = IIS_WS N5-D3 | N4-C1
I2C_DATA = I0I2C_DATA N3-C6
I2C_CLK = I0I2C_CLK N3-C6
IoEFI2 = EFI2 N3-C6
IoEFI3 = EFI3 N3-B6
(UDA)
N38
N47
N48
3808 10K
3811 100R
3813 100R
3816 10K
3817 10K
3818 10K
3819 10K
3820 10K
IISI_SCK
IISI1_SD
IISI0_SD
IISI_SDB
IISI_WS
IIC_SDA
IIC_SCL
IIC_ADDR
STANDALONE
EFI1
EFI2
EFI3
TDO
TCK
TMS
TDI
IISO_WS
IISO_SCK
IISO0_SD
IISO1_SD
IISO2_SD
IISO3_SD
IISO3_WS
IISO3_SCK
IISO3_SDB
SPDIF
EFO1
EFO2
EFO3
EFO4
EFO5
EFO6
N39b
N40
N41
N42
N43
N44
N45
N46
3807 100R
3809 100R
3810 100R
3812 100R
3814 100R
3815 100R
2886 22p
2887 22p
2888 22p
2889 22p
2890 22p
2891 22p
SWS = I2S_WS N2-D7
SCK = I2S_CLK N2-D7
DA0D = IIS_DATA_LR N4-C1
DA1 = IIS_DATA_S N4-D1
DA2 = IIS_DATA_CS N4-C1
DA3 = IIS_DATA_DMIX N5-D3
SPDIF_DUET N2-C1
SYSCLK
VSSA
VSSE1
VSSE2
VSSE3
VSSE4
VSSE5
VSSI1
VSSI2
VSSI3
VSSI4
VSSI5
VSSI6
VSSI7
TRST
RESET
2V3
3821 10K
3805 10K
DSP_RESET = RESET_DUET = I0 RESET N3-C6
N38 50mV / div DC 0.2ms / div
N38a 0.5V / div DC 0.2ms / div
N38b 50mV / div DC 0.5µsec
N47 0.5V / div DC 10ms / div
N48 1V / div DC 0.2ms / div
N39a 0.5V / div DC 0.5µsec
N39b 1.0V / div DC 10µsec
N40 1.0V / div DC 0.5µs / div
N41 1.0V / div DC 0.5µs / div
N42 1.0V / div DC 0.5µs / div
N43 1.0V / div DC 0.5µs / div
N44 1.0V / div DC 0.5µs / div
N45 1.0V / div DC 10µs / div
N46 1V / div DC 0.5µs / div
CL 96532042_012.eps
211201

Note: How to read signal-name references ?
First part: to / from subdiagram
Second part: frame mapping where to find name

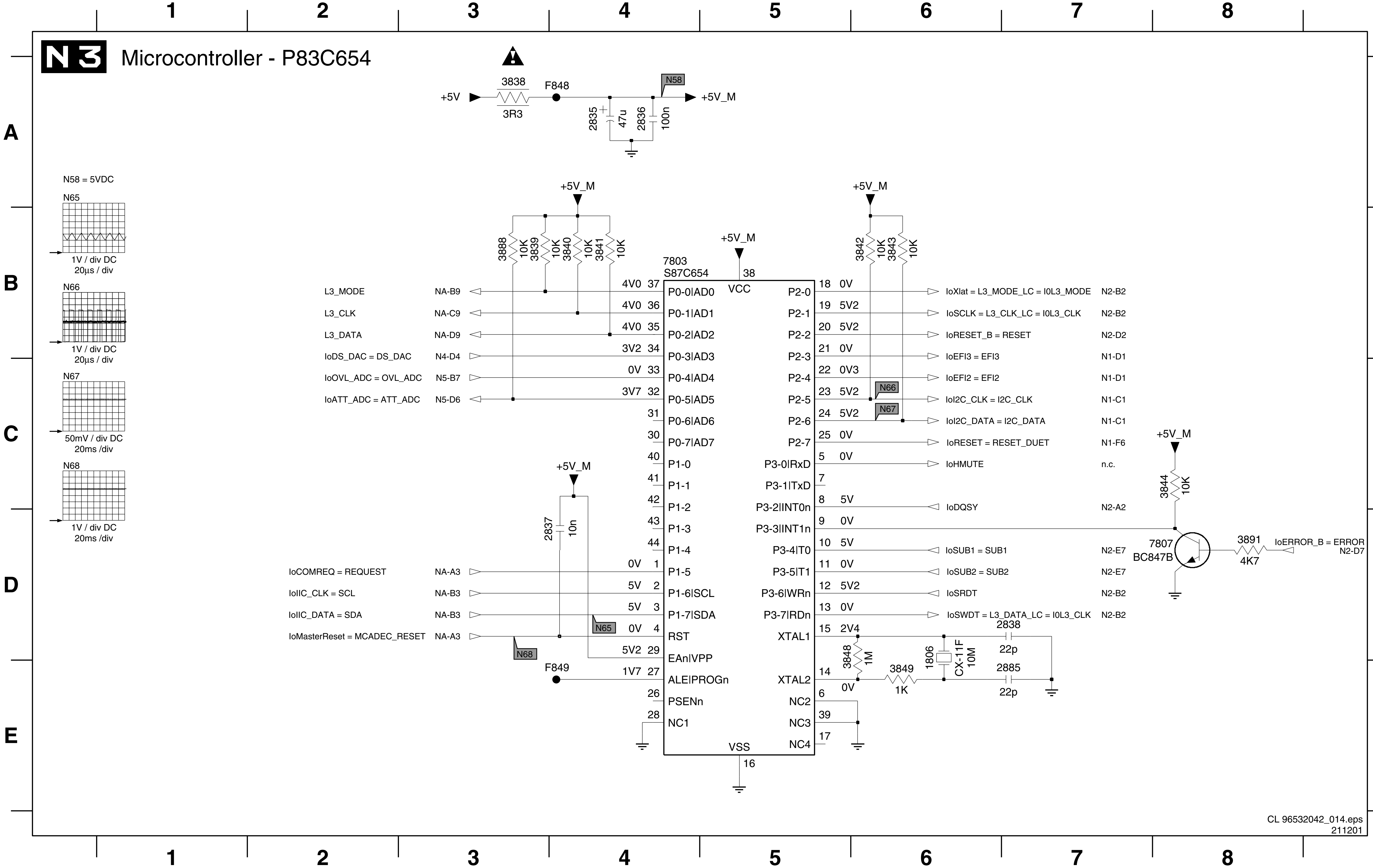
1804	B6
2811	A4
2812	A5
2813	A5
2814	A5
2815	A5
2816	A6
2817	A6
2818	A6
2819	A7
2820	B7
2821	B7
2822	B7
2886	D7
2887	D7
2888	D8
2889	D8
2890	D8
2891	D8
3803	A3
3804	B6
3805	E6
3807	C7
3808	C3
3809	C7
3810	C7
3811	C3
3812	C7
3813	C3
3814	C7
3815	C7
3816	D3
3817	D2
3818	D3
3819	D3
3820	E3
3821	E6
5801	B7
7801	D5
F853	A1

Multi-Channel Sound Module: Digital I/O LC8904Q


N2 Digital I/O LC8904Q
1 2 3 4 5 6 7
A B C D E
+5V
3822 3R3
3823 3R3
F850
F851
N49a
N49b
2823 47u
2824 100n
2825 100n
2826 100n
2827 100n
2828 47u
2829 100n
+5V_D_LC
+5V_A_LC
AGND_LC
IoDQSY = DQSY N3-C6
IoSRDT = SRDT N3-D6
IoL3_CLK = L3_CLK N3-B3
IoL3_MODE = L3_MODE N3-B3
IoL3_DATA = L3_DATA N3-B3
N60
N61
7802
LC8904Q
5V3 5V2 5V2 5V2 5V2 5V2 2V5
AVDD DVDD1 DVDD2 DVDD3 DVDD4 DIISWDT CEIXLAT CLISCLK SRDT DO LDIDQSY
MICROPROCESSOR INTERFACE
MULTIPLEXER
DATA DMOD
LOCK ERROR DETECTION
CD SUBCODE DETECTION
MUTE
TIMING GENERATOR
PLL
OSC
TEST
NC CCBISUB DIN1 DIN2 DIN3 DIN4 DOIV EMPHA CLK CLKMO XMOD R VIN VCO RC1 RC2
SBSY SFSY PW SBCK ERR DATAO LRCK BCLK CLKO2 CLKO1 TEST1 TEST2 SUB1 SUB2
XI XO AGND DGND1 DGND2 DGND3 DGND4
3824 56K
3895 56K
3825 330K
3826 330K
N53
N54
DIG_IN1 NA-I2
DIG_IN2 NA-J2
DIG_IN3 = OPTO_IN NA-J3
SPDIF_DUET N1-D9
DIG_OUT
EMPHA_LC n.c.
3896 75R
3827 75R
RESET_LC = RESET = I0RESET_B N3-B6
3828 5K6
3829 5K6
2830 100n
3830 12K
3831 12K
2831 10n
3834 150R
2832 1n
3835 33K
2833 15p
2834 15p
1805 CX-11F 16M934
3836 220K
3837 100R
N49
2V0
0V
ERROR = I0ERROR_B N3-D8
I2S_DATA N1-C1
I2S_WS N1-C9
I2S_CLK N1-C9
256*fs n.c.
384*fs NA-G6
SUB1 = I0SUB1 N3-D6
SUB2 = I0SUB2 N3-D6
N55 N50 N51 N52 N62 N63
3886 100R
3894 100R
3893 100R
3892 100R
2892 22p
2893 22p
2894 22p
2839 22p
N49a 1V / div DC 10ms / div
N54 0.5V / div DC 0.2ms / div
N49b 1V / div DC 10ms /div
N55 1V / div DC 0.2ms / div
N50 50mV / div DC 10ms /div
N60 1V / div DC 0.2ms / div
N51 1V / div DC 10ms /div
N62 1V / div DC 20µs / div
N52 1V / div DC 0.5µs / div
N63 1V / div DC 50µs / div
N53 0.5V / div DC 0.2ms / div
CL 96532042_013.eps
211201

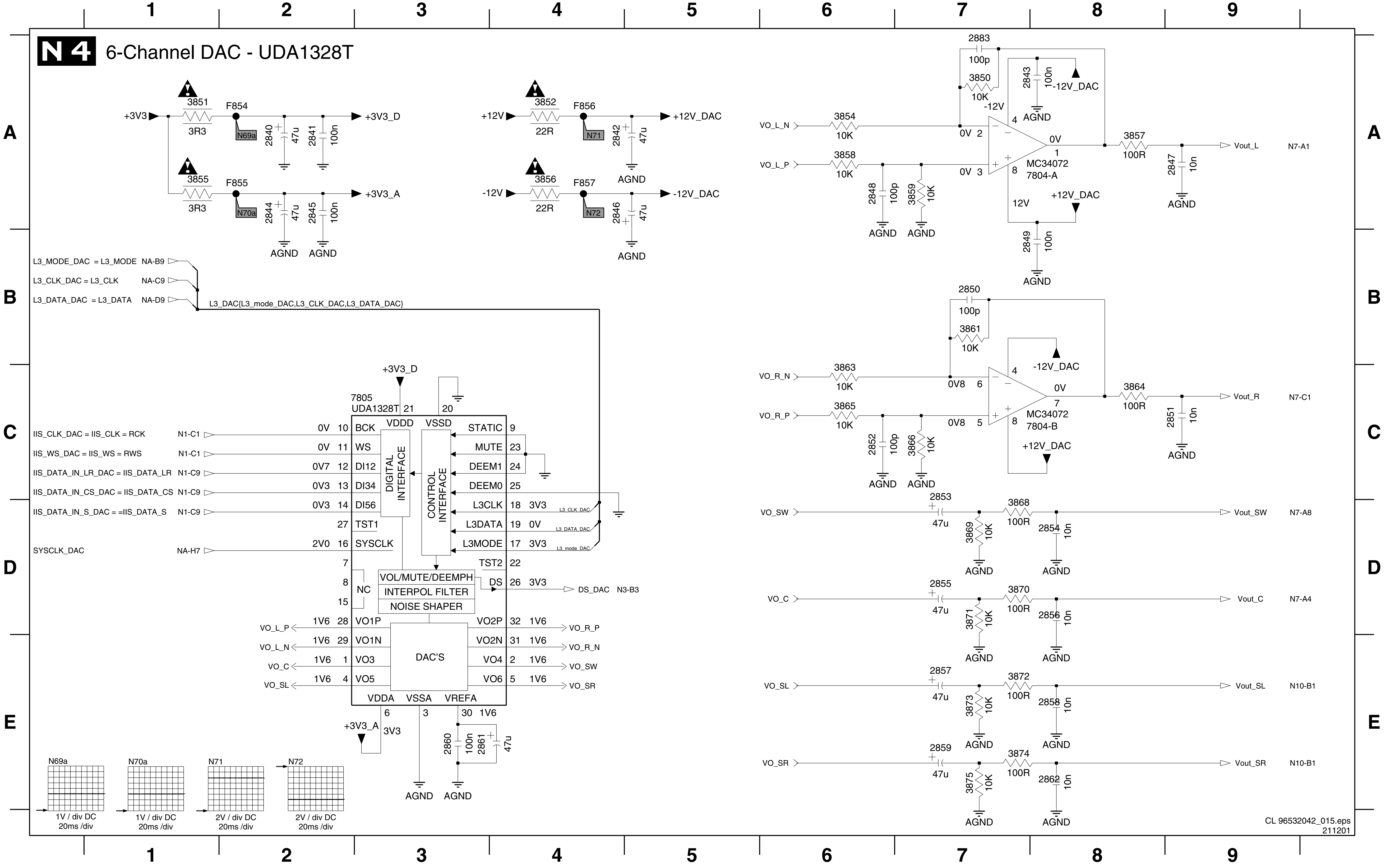
1805	E3
2823	A3
2824	A4
2825	A4
2826	A4
2827	A5
2828	A3
2829	A4
2830	D1
2831	E2
2832	E3
2833	E3
2834	E3
2839	E7
2892	E6
2893	E6
2894	E6
3822	A3
3823	A3
3824	C2
3825	C3
3826	C3
3827	C2
3828	D1
3829	E1
3830	D3
3831	D3
3834	E2
3835	E3
3836	E4
3837	E4
3886	D6
3892	D6
3893	D6
3894	D6
3895	C3
3896	C2
7802	B3
F850	A2
F851	A2

Multi-Channel Sound Module: Micro Controller P83C654


N3
Microcontroller - P83C654
+5V
3838
3R3
F848
N58
+5V_M
2835
47u
2836
100n
N58 = 5VDC
N65
1V / div DC
20µs / div
N66
1V / div DC
20µs / div
N67
50mV / div DC
20ms /div
N68
1V / div DC
20ms /div
+5V_M
3888
10K
3839
10K
3840
10K
3841
10K
7803
S87C654
+5V_M
38
VCC
L3_MODE NA-B9
L3_CLK NA-C9
L3_DATA NA-D9
IoDS_DAC = DS_DAC N4-D4
IoOVL_ADC = OVL_ADC N5-B7
IoATT_ADC = ATT_ADC N5-D6
4V0 37 P0-0|AD0
4V0 36 P0-1|AD1
4V0 35 P0-2|AD2
3V2 34 P0-3|AD3
0V 33 P0-4|AD4
3V7 32 P0-5|AD5
31 P0-6|AD6
30 P0-7|AD7
40 P1-0
41 P1-1
42 P1-2
43 P1-3
44 P1-4
0V 1 P1-5
5V 2 P1-6|SCL
5V 3 P1-7|SDA
0V 4 RST
5V2 29 EAn|VPP
1V7 27 ALE|PROGn
26 PSENn
28 NC1
VSS
16
+5V_M
2837
10n
N65
N68
F849
IoCOMREQ = REQUEST NA-A3
IoIIC_CLK = SCL NA-B3
IoIIC_DATA = SDA NA-B3
IoMasterReset = MCADEC_RESET NA-A3
+5V_M
3842
10K
3843
10K
P2-0 18 0V
P2-1 19 5V2
P2-2 20 5V2
P2-3 21 0V
P2-4 22 0V3
P2-5 23 5V2
P2-6 24 5V2
P2-7 25 0V
P3-0|RxD 5 0V
P3-1|TxD 7
P3-2|INT0n 8 5V
P3-3|INT1n 9 0V
P3-4|T0 10 5V
P3-5|T1 11 0V
P3-6|WRn 12 5V2
P3-7|RDn 13 0V
XTAL1 15 2V4
XTAL2 14 0V
NC2 6
NC3 39
NC4 17
N66
N67
IoXlat = L3_MODE_LC = I0L3_MODE N2-B2
IoSCLK = L3_CLK_LC = I0L3_CLK N2-B2
IoRESET_B = RESET N2-D2
IoEFI3 = EFI3 N1-D1
IoEFI2 = EFI2 N1-D1
IoI2C_CLK = I2C_CLK N1-C1
IoI2C_DATA = I2C_DATA N1-C1
IoRESET = RESET_DUET N1-F6
IoHMUTE n.c.
IoDQSY N2-A2
IoSUB1 = SUB1 N2-E7
IoSUB2 = SUB2 N2-E7
IoSRDT N2-B2
IoSWDT = L3_DATA_LC = I0L3_CLK N2-B2
+5V_M
3844
10K
7807
BC847B
3891
4K7
IoERROR_B = ERROR N2-D7
3848
1M
3849
1K
1806
CX-11F
10M
2838
22p
2885
22p
1 2 3 4 5 6 7 8
A B C D E
CL 96532042_014.eps
211201

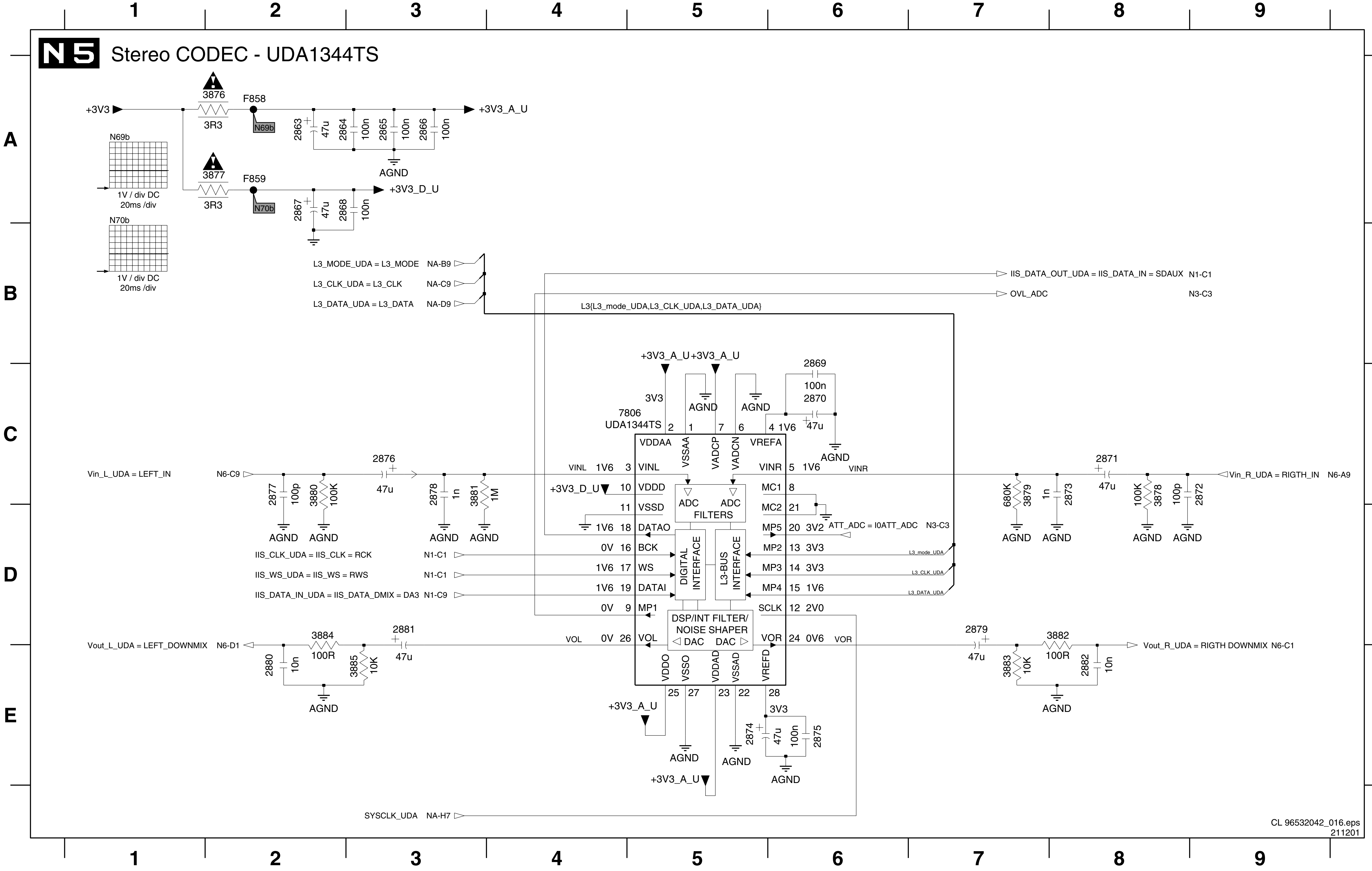
1806	D6
2835	A4
2836	A4
2837	D4
2838	D7
2885	E7
3838	A3
3839	B3
3840	B4
3841	B4
3842	B6
3843	B6
3844	C7
3848	D5
3849	E6
3888	B3
3891	D8
7803	B4
7807	D7
F848	A4
F849	E4

Multi-Channel Sound Module: 6-Channel DAC - UDA1328T


N4
6-Channel DAC - UDA1328T
1 2 3 4 5 6 7 8 9
A B C D E
+3V3
3851 3R3
F854
N69a
2840 47u
2841 100n
+3V3_D
3855 3R3
F855
N70a
2844 47u
2845 100n
+3V3_A
AGND
+12V
3852 22R
F856
N71
2842 47u
+12V_DAC
-12V
3856 22R
F857
N72
2846 47u
-12V_DAC
L3_MODE_DAC = L3_MODE NA-B9
L3_CLK_DAC = L3_CLK NA-C9
L3_DATA_DAC = L3_DATA NA-D9
L3_DAC{L3_mode_DAC,L3_CLK_DAC,L3_DATA_DAC}
IIS_CLK_DAC = IIS_CLK = RCK N1-C1
IIS_WS_DAC = IIS_WS = RWS N1-C1
IIS_DATA_IN_LR_DAC = IIS_DATA_LR N1-C9
IIS_DATA_IN_CS_DAC = IIS_DATA_CS N1-C9
IIS_DATA_IN_S_DAC = =IIS_DATA_S N1-C9
SYSCLK_DAC NA-H7
7805
UDA1328T
+3V3_D
VDDD VSSD
BCK WS DI12 DI34 DI56 TST1 SYSCLK
DIGITAL INTERFACE
CONTROL INTERFACE
STATIC MUTE DEEM1 DEEM0 L3CLK L3DATA L3MODE TST2 DS
NC
VOL/MUTE/DEEMPH
INTERPOL FILTER
NOISE SHAPER
DAC'S
VO1P VO1N VO3 VO5 VO2P VO2N VO4 VO6
VDDA VSSA VREFA
DS_DAC N3-B3
VO_L_P VO_L_N VO_C VO_SL VO_R_P VO_R_N VO_SW VO_SR
+3V3_A 3V3
2860 100n
2861 47u
N69a 1V / div DC 20ms /div
N70a 1V / div DC 20ms /div
N71 2V / div DC 20ms /div
N72 2V / div DC 20ms /div
2883 100p
3850 10K
2843 100n
-12V_DAC
3854 10K
3858 10K
2848 100p
3859 10K
MC34072
7804-A
3857 100R
2847 10n
Vout_L N7-A1
+12V_DAC
2849 100n
2850 100p
3861 10K
3863 10K
3865 10K
2852 100p
3866 10K
7804-B
3864 100R
2851 10n
Vout_R N7-C1
VO_SW 2853 47u 3869 10K 3868 100R 2854 10n Vout_SW N7-A8
VO_C 2855 47u 3871 10K 3870 100R 2856 10n Vout_C N7-A4
VO_SL 2857 47u 3873 10K 3872 100R 2858 10n Vout_SL N10-B1
VO_SR 2859 47u 3875 10K 3874 100R 2862 10n Vout_SR N10-B1
CL 96532042_015.eps
211201

2840	A2
2841	A2
2842	A4
2843	A7
2844	A2
2845	A2
2846	A4
2847	A9
2848	A6
2849	B7
2850	B7
2851	C9
2852	C6
2853	D7
2854	D8
2855	D7
2856	D8
2857	E7
2858	E8
2859	E7
2860	E3
2861	E3
2862	E8
2883	A7
3850	A7
3851	A1
3852	A4
3854	A6
3855	A1
3856	A4
3857	A8
3858	A6
3859	A7
3861	B7
3863	C6
3864	C8
3865	C6
3866	C7
3868	D7
3869	D7
3870	D7
3871	D7
3872	E7
3873	E7
3874	E7
3875	E7
7804-A	A7
7804-B	C7
7805	C2
F854	A2
F855	A2
F856	A4
F857	A4

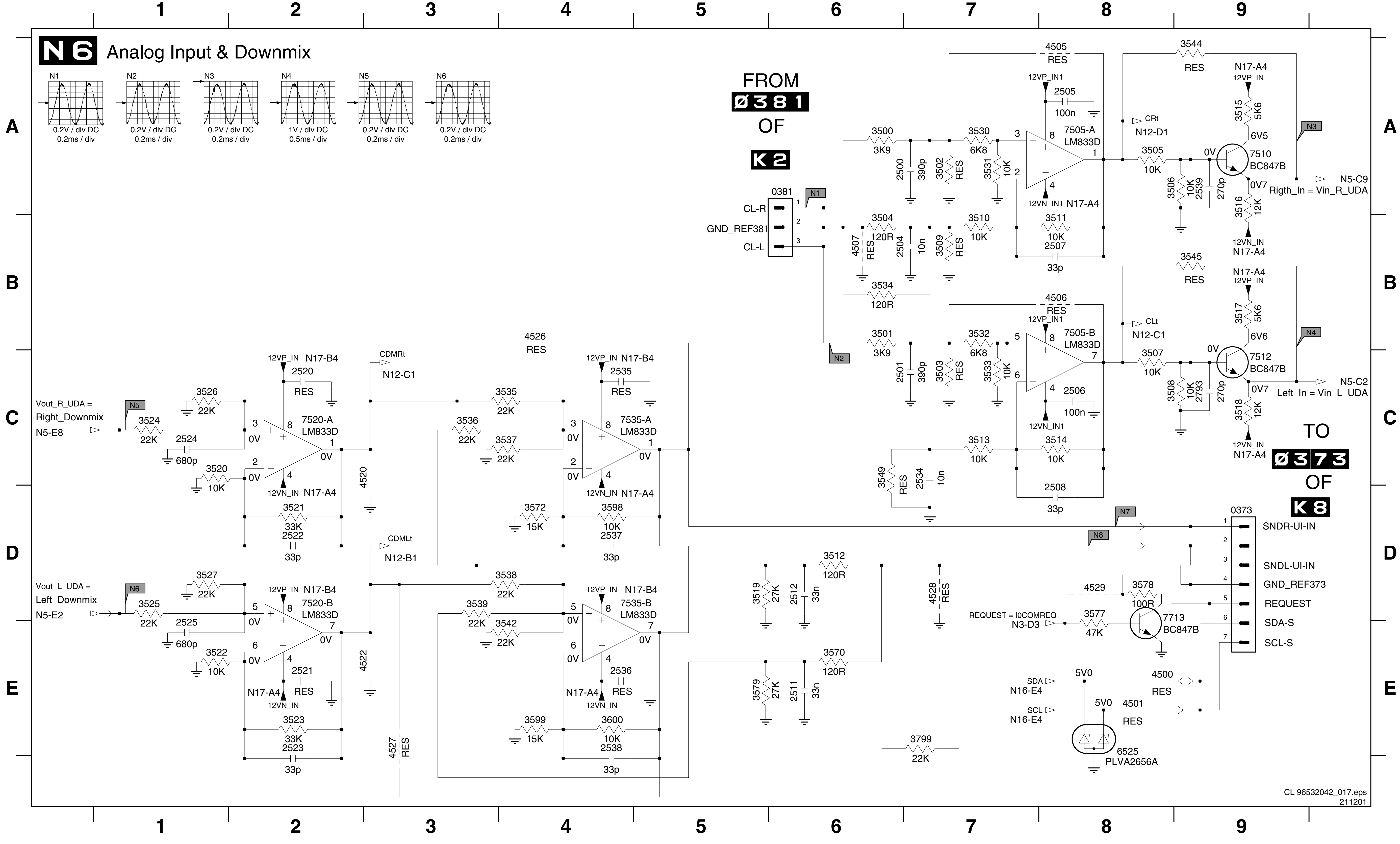
Multi-Channel Sound Module: Stereo CODEC - UDA 1344TS


N5
Stereo CODEC - UDA1344TS
+3V3
3876
3R3
F858
N69b
+3V3_A_U
2863 47u
2864 100n
2865 100n
2866 100n
AGND
3877
3R3
F859
N70b
+3V3_D_U
2867 47u
2868 100n
N69b
1V / div DC
20ms /div
N70b
1V / div DC
20ms /div
L3_MODE_UDA = L3_MODE NA-B9
L3_CLK_UDA = L3_CLK NA-C9
L3_DATA_UDA = L3_DATA NA-D9
L3{L3_mode_UDA,L3_CLK_UDA,L3_DATA_UDA}
IIS_DATA_OUT_UDA = IIS_DATA_IN = SDAUX N1-C1
OVL_ADC N3-C3
+3V3_A_U +3V3_A_U
2869 100n
2870 47u
3V3
7806
UDA1344TS
AGND
1V6
VDDAA VSSAA VADCP VADCN VREFA
VINL VINR
VDDD VSSD DATAO BCK WS DATAI MP1 VOL
MC1 MC2 MP5 MP2 MP3 MP4 SCLK VOR
ADC ADC
FILTERS
DIGITAL INTERFACE
L3-BUS INTERFACE
DSP/INT FILTER/ NOISE SHAPER
DAC DAC
VDDO VSSO VDDAD VSSAD VREFD
Vin_L_UDA = LEFT_IN N6-C9
2876 47u
2877 100p
3880 100K
2878 1n
3881 1M
VINL 1V6 3
+3V3_D_U 10
11
1V6 18
0V 16
1V6 17
1V6 19
0V 9
VOL 0V 26
5 1V6 VINR
8
21
20 3V2
13 3V3
14 3V3
15 1V6
12 2V0
24 0V6 VOR
ATT_ADC = I0ATT_ADC N3-C3
L3_mode_UDA
L3_CLK_UDA
L3_DATA_UDA
IIS_CLK_UDA = IIS_CLK = RCK N1-C1
IIS_WS_UDA = IIS_WS = RWS N1-C1
IIS_DATA_IN_UDA = IIS_DATA_DMIX = DA3 N1-C9
2871 47u
Vin_R_UDA = RIGTH_IN N6-A9
680K 3879
1n 2873
100K 3878
100p 2872
Vout_L_UDA = LEFT_DOWNMIX N6-D1
3884 100R
2881 47u
2880 10n
3885 10K
2879 47u
3882 100R
3883 10K
2882 10n
Vout_R_UDA = RIGTH DOWNMIX N6-C1
25 27 23 22 28
+3V3_A_U
3V3
2874 47u
100n 2875
SYSCLK_UDA NA-H7
1 2 3 4 5 6 7 8 9
A B C D E
CL 96532042_016.eps
211201

2863	**A2**
2864	**A3**
2865	**A3**
2866	**A3**
2867	**A2**
2868	**A3**
2869	**C6**
2870	**C6**
2871	**C8**
2872	**C9**
2873	**C8**
2874	**E5**
2875	**E6**
2876	**C3**
2877	**C2**
2878	**C3**
2879	**D7**
2880	**E2**
2881	**D3**
2882	**E8**
3876	**A2**
3877	**A2**
3878	**C8**
3879	**C7**
3880	**C2**
3881	**C3**
3882	**D8**
3883	**E7**
3884	**D2**
3885	**E3**
7806	**C5**
F858	**A2**
F859	**A2**

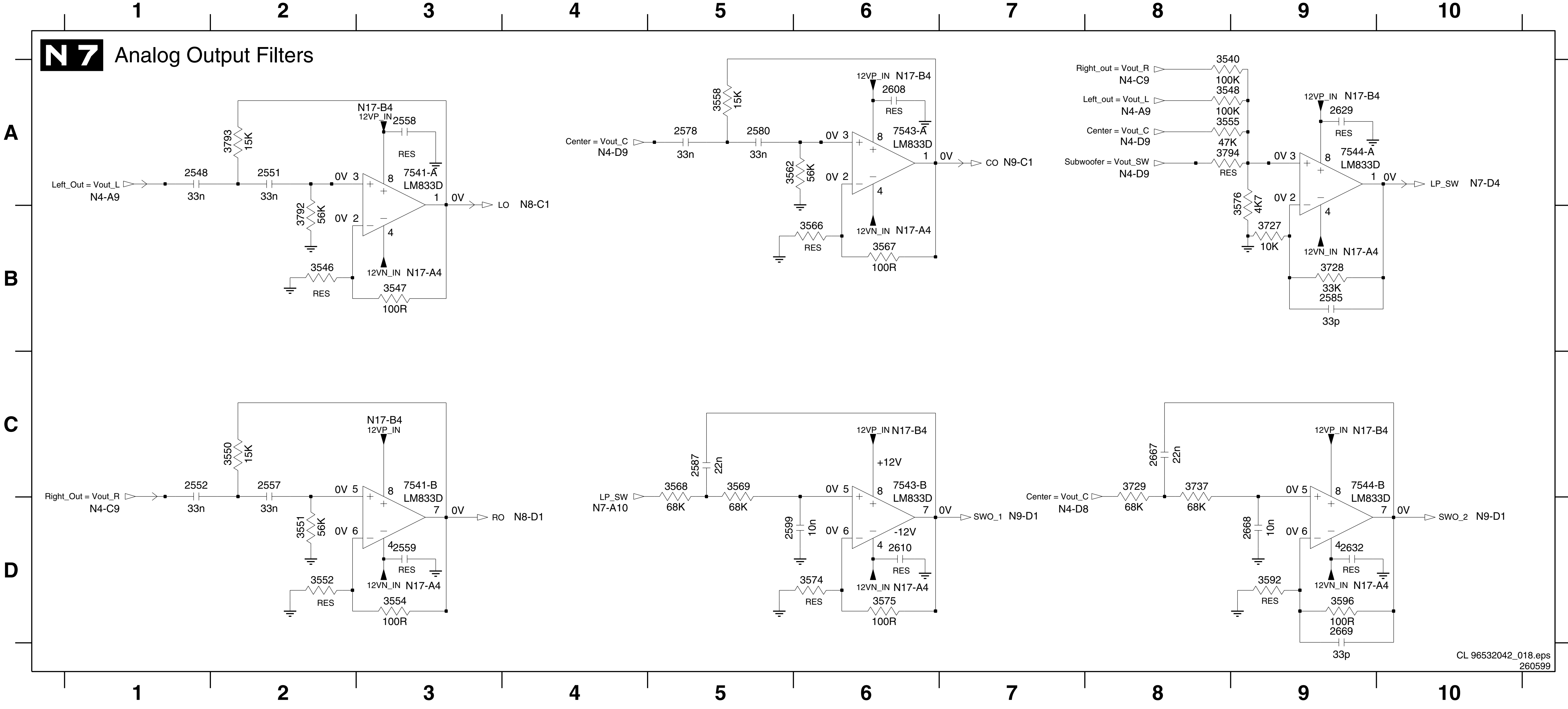
Multi-Channel Sound Module: Analog Input and Downmix

0373 D9
0381 A6
2500 A6
2501 C6
2504 B6
2505 A8
2506 C8
2507 B8
2508 D8
2511 E6
2512 D6
2520 C2
2521 E2
2522 D2
2523 E2
2524 C1
2525 E1
2534 C7
2535 C4
2536 E4
2537 D4
2538 E4
2539 A9
2793 C9
3500 A6
3501 B6
3502 A7
3503 C7
3504 B6
3505 A8
3506 A9
3507 C8
3508 C9
3509 B7
3510 B7
3511 B8
3512 D6
3513 C7
3514 C8
3515 A9
3516 A9
3517 B9
3518 C9
3519 D5
3520 C1
3521 D2
3522 E1
3523 E2
3524 C1
3525 D1
3526 C1
3527 D1
3530 A7
3531 A7
3532 B7
3533 C7
3534 B6
3535 C4
3536 C3
3537 C4
3538 D4
3539 D3
3542 E4
3544 A9
3545 B9
3549 C6
3570 E6
3572 D4
3577 D8
3578 D8
3579 E5
3598 D4
3599 E4
3600 E4
3799 E7
4500 E8
4501 E8
4505 A8
4506 B8
4507 B6
4520 C3
4522 E3
4526 B4
4527 E3
4528 D7
4529 D8
6525 E8
7505-A A8
7505-B B8
7510 A9
7512 C9
7520-A C2
7520-B D2
7535-A C4
7535-B D4
7713 E8

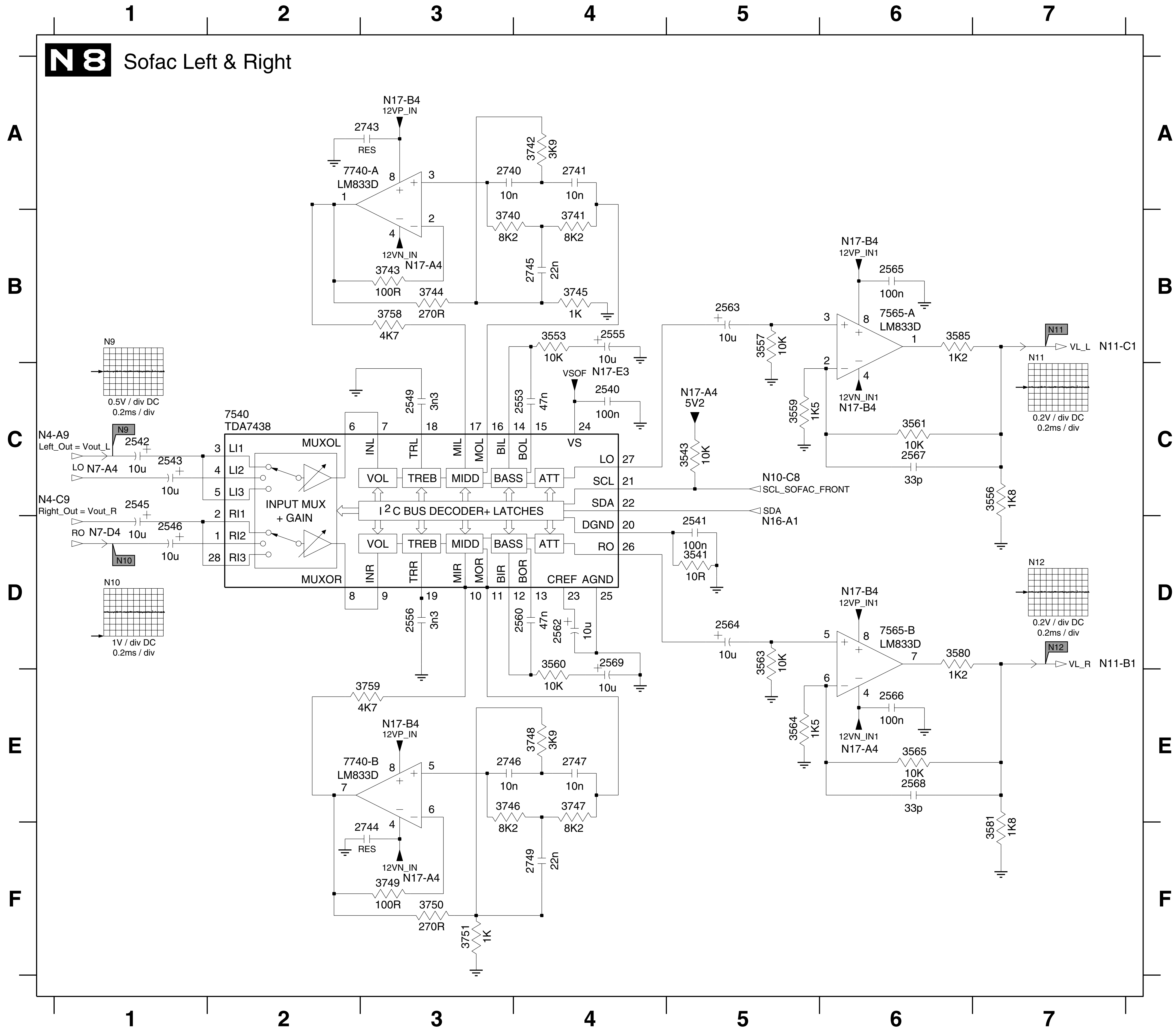

N6 Analog Input & Downmix
N1 0.2V / div DC 0.2ms / div
N2 0.2V / div DC 0.2ms / div
N3 0.2V / div DC 0.2ms / div
N4 1V / div DC 0.5ms / div
N5 0.2V / div DC 0.2ms / div
N6 0.2V / div DC 0.2ms / div
FROM 0381 OF K2
0381
CL-R
GND_REF381
CL-L
TO 0373 OF K8
0373
SNDR-UI-IN
SNDL-UI-IN
GND_REF373
REQUEST
SDA-S
SCL-S
7505-A LM833D
7505-B LM833D
7510 BC847B
7512 BC847B
7520-A LM833D
7520-B LM833D
7535-A LM833D
7535-B LM833D
7713 BC847B
6525 PLVA2656A
Rigth_In = Vin_R_UDA
Left_In = Vin_L_UDA
N5-C9
N5-C2
Vout_R_UDA = Right_Downmix N5-E8
Vout_L_UDA = Left_Downmix N5-E2
CDMRt N12-C1
CDMLt N12-B1
CRt N12-D1
CLt N12-C1
REQUEST = I0COMREQ N3-D3
SDA N16-E4
SCL N16-E4
12VP_IN
12VN_IN
12VP_IN1
12VN_IN1
N17-A4
N17-B4
5V0
6V5
6V6
0V
0V7
3500 3K9
3501 3K9
3502 RES
3503 RES
3504 120R
3505 10K
3506 10K
3507 10K
3508 10K
3509 RES
3510 10K
3511 10K
3512 120R
3513 10K
3514 10K
3515 5K6
3516 12K
3517 5K6
3518 12K
3519 27K
3520 10K
3521 33K
3522 10K
3523 33K
3524 22K
3525 22K
3526 22K
3527 22K
3530 6K8
3531 10K
3532 6K8
3533 10K
3534 120R
3535 22K
3536 22K
3537 22K
3538 22K
3539 22K
3542 22K
3544 RES
3545 RES
3549 RES
3570 120R
3572 15K
3577 47K
3578 100R
3579 27K
3598 10K
3599 15K
3600 10K
3799 22K
2500 390p
2501 390p
2504 10n
2505 100n
2506 100n
2507 33p
2508 33p
2511 33n
2512 33n
2520 RES
2521 RES
2522 33p
2523 33p
2524 680p
2525 680p
2534 10n
2535 RES
2536 RES
2537 33p
2538 33p
2539 270p
2793 270p
4500 RES
4501 RES
4505 RES
4506 RES
4507 RES
4520
4522
4526 RES
4527 RES
4528 RES
4529
N1 N2 N3 N4 N5 N6 N7 N8
1 2 3 4 5 6 7 8 9
A B C D E
CL 96532042_017.eps
211201

Multi-Channel Sound Module: Analog Output Filters

2548 A1
2551 A2
2552 C1
2557 C2
2558 A3
2559 D3
2578 A5
2580 A5
2585 B9
2587 C5
2599 D5
2608 A6
2610 D6
2629 A9
2632 D9
2667 C8
2668 D9
2669 D9
3540 A8
3546 B2
3547 B3
3548 A8
3550 C2
3551 D2
3552 D2
3554 D3
3555 A8
3558 A5
3562 A5
3566 B6
3567 B6
3568 C5
3569 C5
3574 D6
3575 D6
3576 A9
3592 D9
3596 D9
3727 B9
3728 B9
3729 C8
3737 C8
3792 B2
3793 A2
3794 A8
7541-A A3
7541-B C3
7543-A A6
7543-B C6
7544-A A9
7544-B C9

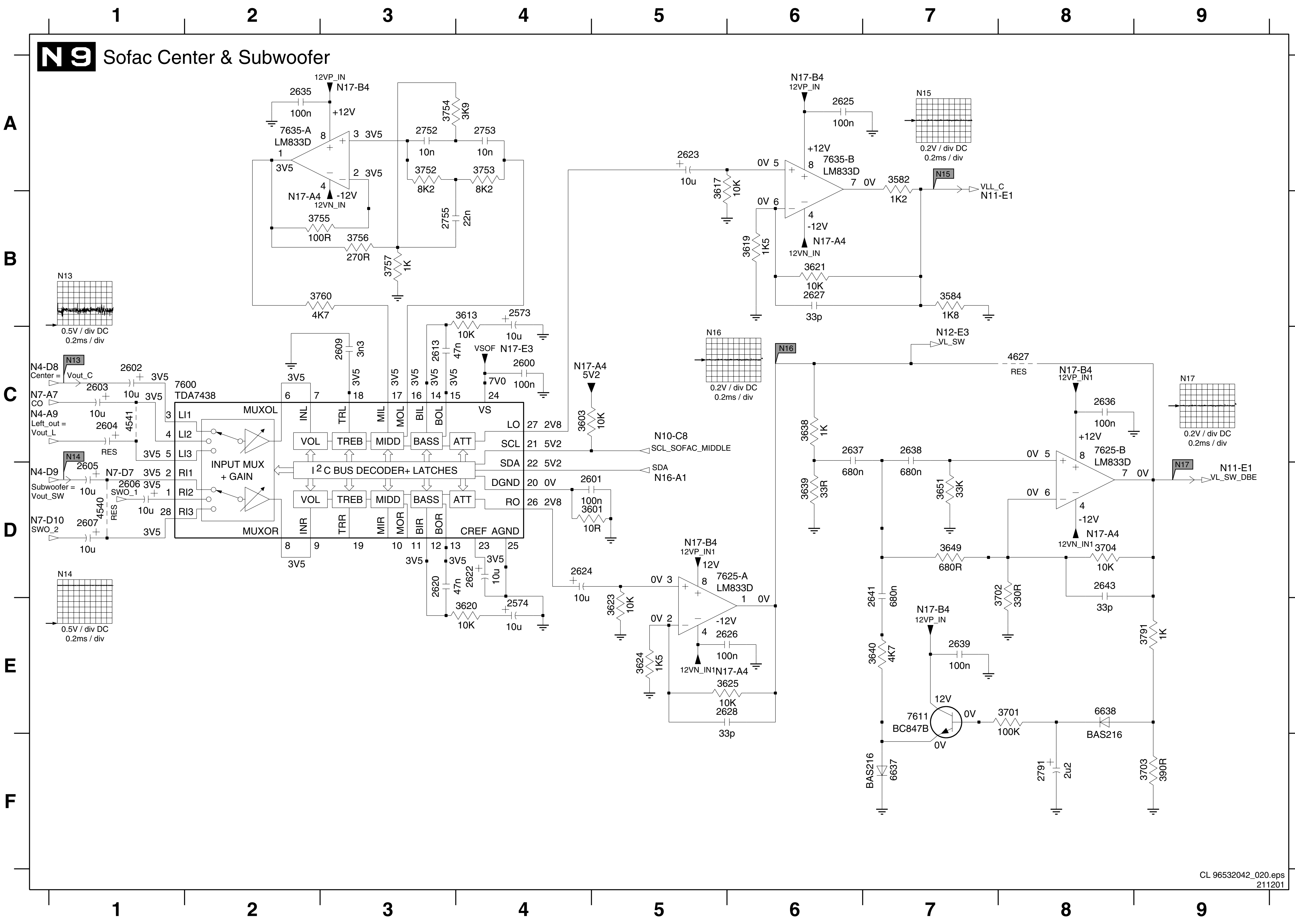

N 7 Analog Output Filters
1 2 3 4 5 6 7 8 9 10
A B C D
Left_Out = Vout_L
N4-A9
2548 33n
2551 33n
3793 15K
3792 56K
N17-B4
12VP_IN
2558
RES
0V 3
0V 2
8
4
1
7541-A
LM833D
0V
LO N8-C1
3546 RES
3547 100R
12VN_IN N17-A4
Center = Vout_C
N4-D9
2578 33n
2580 33n
3558 15K
3562 56K
12VP_IN N17-B4
2608 RES
7543-A
LM833D
CO N9-C1
3566 RES
3567 100R
12VN_IN N17-A4
Right_out = Vout_R
N4-C9
3540 100K
Left_out = Vout_L
N4-A9
3548 100K
Center = Vout_C
N4-D9
3555 47K
Subwoofer = Vout_SW
N4-D9
3794 RES
3576 4K7
3727 10K
12VP_IN N17-B4
2629 RES
7544-A
LM833D
LP_SW N7-D4
12VN_IN N17-A4
3728 33K
2585 33p
Right_Out = Vout_R
N4-C9
2552 33n
2557 33n
3550 15K
3551 56K
N17-B4
12VP_IN
0V 5
0V 6
7541-B
LM833D
7
RO N8-D1
2559 RES
12VN_IN N17-A4
3552 RES
3554 100R
LP_SW
N7-A10
3568 68K
3569 68K
2587 22n
2599 10n
12VP_IN N17-B4
+12V
7543-B
LM833D
-12V
2610 RES
SWO_1 N9-D1
12VN_IN N17-A4
3574 RES
3575 100R
Center = Vout_C
N4-D8
3729 68K
3737 68K
2667 22n
2668 10n
12VP_IN N17-B4
7544-B
LM833D
2632 RES
SWO_2 N9-D1
12VN_IN N17-A4
3592 RES
3596 100R
2669 33p
CL 96532042_018.eps
260599

Multi-Channel Sound Module: Sofac Left and Right


N8 Sofac Left & Right
1 2 3 4 5 6 7
A B C D E F
N17-B4
12VP_IN
2743
RES
7740-A
LM833D
12VN_IN
N17-A4
3743
100R
3744
270R
3758
4K7
3742
3K9
2740
10n
2741
10n
3740
8K2
3741
8K2
2745
22n
3745
1K
3553
10K
2555
10u
VSOF
N17-E3
2540
100n
2549
3n3
2553
47n
N9
0.5V / div DC
0.2ms / div
N4-A9
Left_Out = Vout_L
2542
10u
2543
10u
LO
N7-A4
N4-C9
Right_Out = Vout_R
2545
10u
2546
10u
RO
N7-D4
N10
1V / div DC
0.2ms / div
7540
TDA7438
MUXOL
MUXOR
LI1 LI2 LI3 RI1 RI2 RI3
INPUT MUX + GAIN
INL TRL MIL MOL BIL BOL VS
VOL TREB MIDD BASS ATT
I2C BUS DECODER+ LATCHES
INR TRR MIR MOR BIR BOR CREF AGND
LO SCL SDA DGND RO
N17-A4
5V2
3543
10K
N10-C8
SCL_SOFAC_FRONT
SDA
N16-A1
2541
100n
3541
10R
2556
3n3
2560
47n
2562
10u
3560
10K
2569
10u
3759
4K7
7740-B
LM833D
2744
RES
3749
100R
3750
270R
3751
1K
3748
3K9
2746
10n
2747
10n
3746
8K2
3747
8K2
2749
22n
2563
10u
3557
10K
N17-B4
12VP_IN1
2565
100n
7565-A
LM833D
12VN_IN1
3559
1K5
3561
10K
2567
33p
3585
1K2
3556
1K8
N11
VL_L
N11-C1
0.2V / div DC
0.2ms / div
2564
10u
3563
10K
7565-B
LM833D
2566
100n
3564
1K5
3565
10K
2568
33p
3580
1K2
3581
1K8
N12
VL_R
N11-B1
0.2V / div DC
0.2ms / div

2540	C4
2541	D5
2542	C1
2543	C1
2545	C1
2546	D1
2549	C3
2553	C4
2555	B4
2556	D3
2560	D4
2562	D4
2563	B5
2564	D5
2565	B6
2566	E6
2567	C6
2568	E6
2569	D4
2740	A3
2741	A4
2743	A3
2744	F3
2745	B4
2746	E3
2747	E4
2749	F4
3541	D5
3543	C5
3553	B4
3556	C7
3557	B5
3559	C5
3560	D4
3561	C6
3563	D5
3564	E5
3565	E6
3580	D6
3581	F7
3585	B6
3740	B3
3741	B4
3742	A4
3743	B3
3744	B3
3745	B4
3746	E3
3747	E4
3748	E4
3749	F3
3750	F3
3751	F3
3758	B3
3759	E3
7540	C2
7565-A	B6
7565-B	D6
7740-A	A3
7740-B	E3

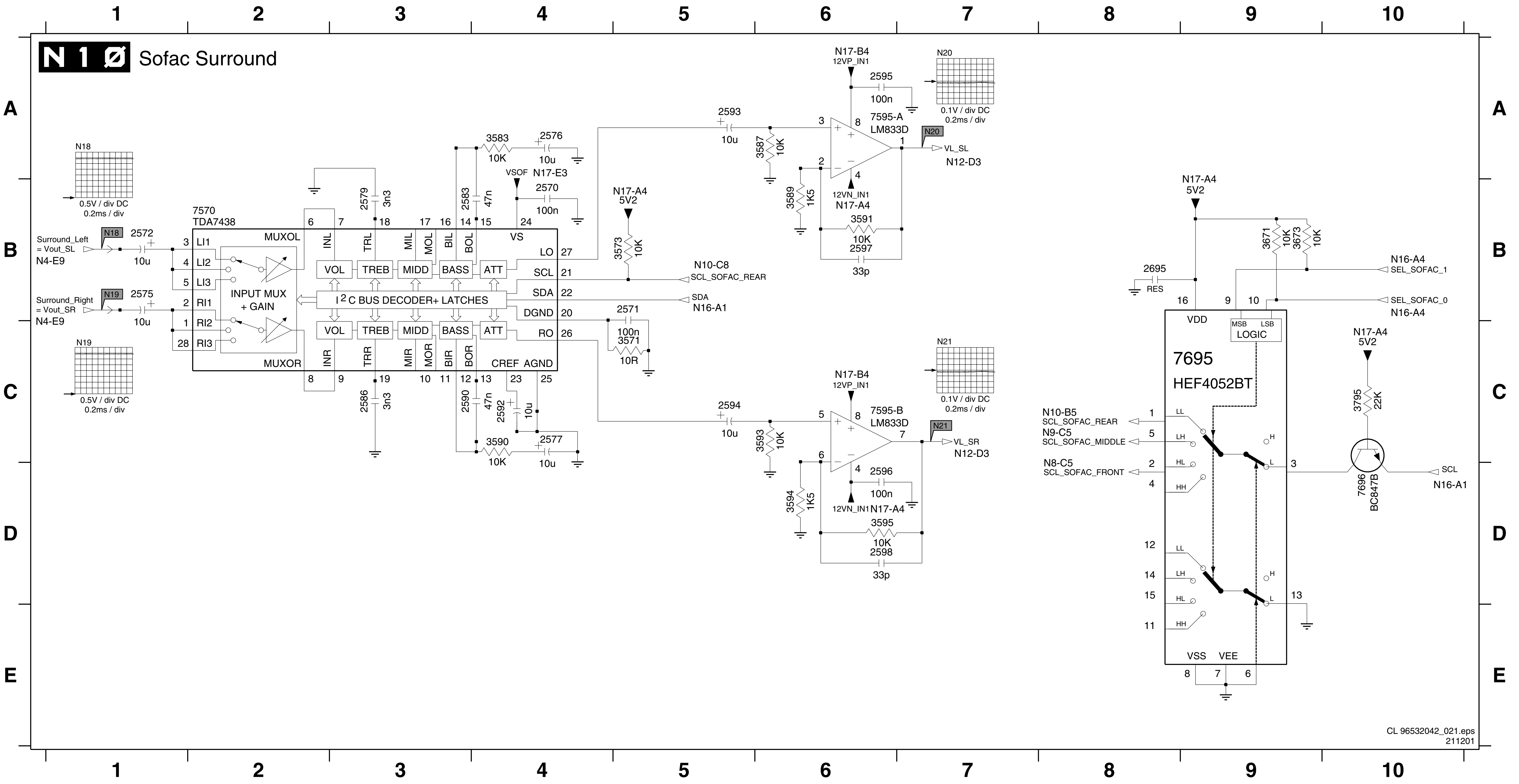
Multi-Channel Sound Module: Sofac Center and Subwoofer


N9 Sofac Center & Subwoofer
1 2 3 4 5 6 7 8 9
A B C D E F
7600
TDA7438
MUXOL
MUXOR
INPUT MUX + GAIN
I2C BUS DECODER+ LATCHES
VOL TREB MIDD BASS ATT
LI1 LI2 LI3 RI1 RI2 RI3
INL TRL MIL MOL BIL BOL VS
INR TRR MIR MOR BIR BOR CREF AGND
LO 27 2V8
SCL 21 5V2
SDA 22 5V2
DGND 20 0V
RO 26 2V8
7635-A LM833D
7635-B LM833D
7625-A LM833D
7625-B LM833D
7611 BC847B
6637 BAS216
6638 BAS216
N4-D8 Center = Vout_C
N7-A7 CO
N4-A9 Left_out = Vout_L
N4-D9 Subwoofer = Vout_SW
N7-D7 SWO_1
N7-D10 SWO_2
N10-C8 SCL_SOFAC_MIDDLE
SDA N16-A1
VLL_C N11-E1
N12-E3 VL_SW
VL_SW_DBE N11-E1
N17-B4 12VP_IN
N17-A4 12VN_IN
N17-B4 12VP_IN1
N17-A4 12VN_IN1
VSOF N17-E3
N13 N14 N15 N16 N17
0.5V / div DC 0.2ms / div
0.2V / div DC 0.2ms / div
2635 100n
3754 3K9
2752 10n
2753 10n
3752 8K2
3753 8K2
2755 22n
3755 100R
3756 270R
3757 1K
3760 4K7
2609 3n3
2613 47n
3613 10K
2573 10u
2600 100n
3603 10K
2602 10u
2603 10u
2604 RES
4541 RES
2605 10u
2606 10u
2607 10u
4540 RES
2601 100n
3601 10R
2620 47n
2622 10u
3620 10K
2574 10u
2623 10u
3617 10K
3619 1K5
3582 1K2
2625 100n
3621 10K
2627 33p
3584 1K8
2624 10u
3623 10K
3624 1K5
2626 100n
3625 10K
2628 33p
4627 RES
3638 1K
2637 680n
2638 680n
3639 33R
3651 33K
2636 100n
3649 680R
3704 10K
2643 33p
3702 330R
2641 680n
3640 4K7
2639 100n
3701 100K
2791 2u2
3791 1K
3703 390R
CL 96532042_020.eps
211201

2573	B4
2574	E4
2600	C4
2601	D4
2602	C1
2603	C1
2604	C1
2605	D1
2606	D1
2607	D1
2609	C3
2613	C3
2620	D3
2622	D4
2623	A5
2624	D4
2625	A6
2626	E5
2627	B6
2628	E5
2635	A2
2636	C8
2637	C6
2638	C7
2639	E7
2641	D7
2643	D8
2752	A3
2753	A4
2755	B3
2791	F8
3582	A7
3584	B7
3601	D5
3603	C4
3613	B4
3617	A5
3619	B6
3620	E4
3621	B6
3623	E5
3624	E5
3625	E6
3638	C6
3639	D6
3640	E7
3649	D7
3651	D7
3701	E8
3702	D8
3703	F9
3704	D8
3752	A3
3753	A4
3754	A3
3755	B2
3756	B3
3757	B3
3760	B3
3791	E9
4540	D1
4541	C1
4627	C8
6637	F7
6638	E8
7600	C1
7611	E7
7625-A	D5
7625-B	C8
7635-A	A2
7635-B	A6

Multi-Channel Sound Module: Sofac Surround

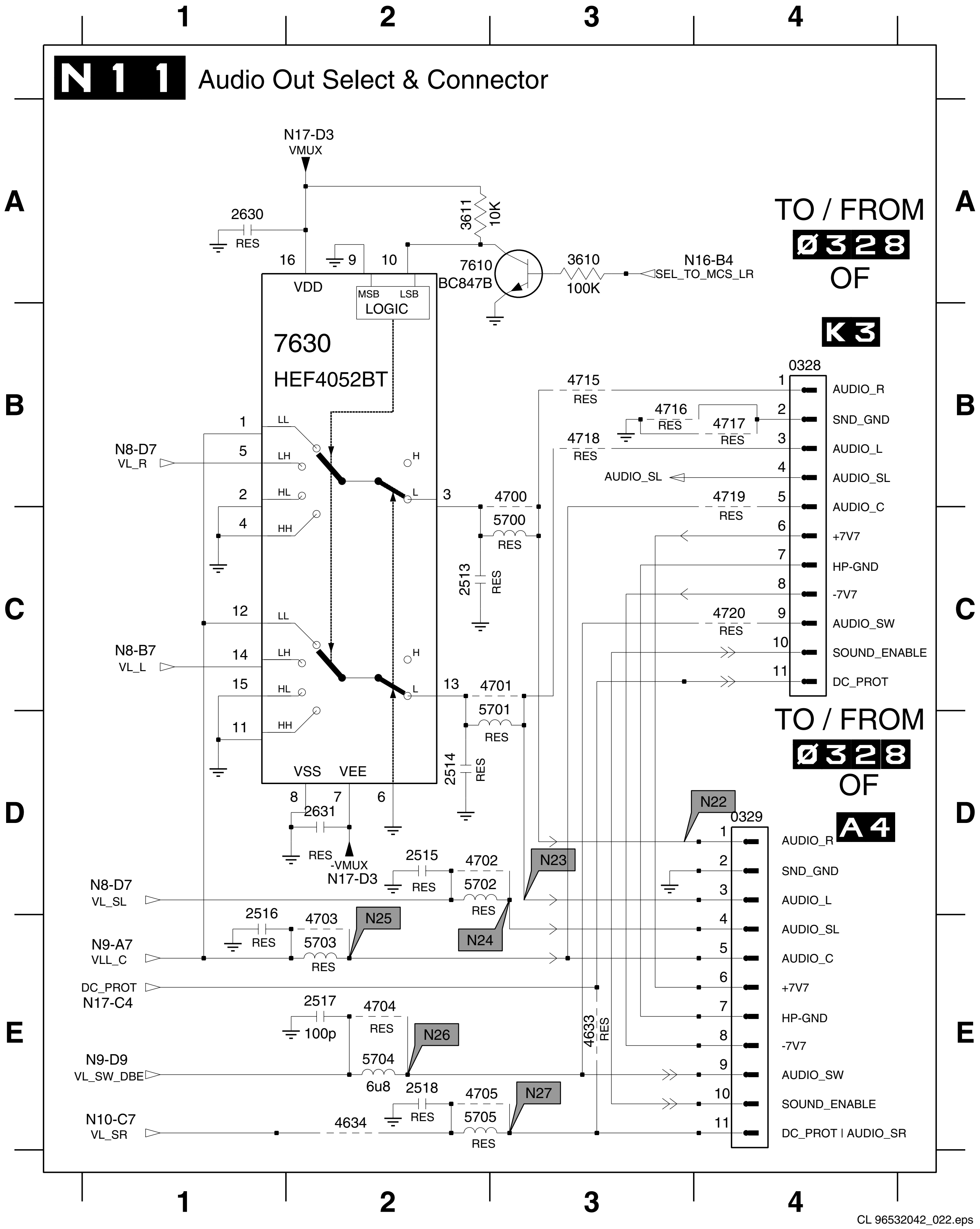
2570 B4	2572 B1	2576 A4	2579 B3	2586 C3	2592 C4	2594 C5	2596 D6	2598 D6	3571 C5	3583 A4	3589 B6	3591 B6	3594 D6	3671 B9	3795 C10	7595-A A6	7695 C8
2571 B5	2575 B1	2577 C4	2583 B3	2590 C3	2593 A5	2595 A6	2597 B6	2695 B8	3573 B5	3587 A6	3590 C4	3593 C6	3595 D6	3673 B9	7570 B2	7595-B C6	7696 D10



1 2 3 4 5 6 7 8 9 10
A B C D E
N10 Sofac Surround
N18
0.5V / div DC
0.2ms / div
N19
0.5V / div DC
0.2ms / div
Surround_Left
= Vout_SL
N4-E9
Surround_Right
= Vout_SR
N4-E9
2572
10u
2575
10u
7570
TDA7438
MUXOL
MUXOR
LI1 LI2 LI3 RI1 RI2 RI3
INPUT MUX
+ GAIN
INL TRL MIL MOL BIL BOL VS
INR TRR MIR MOR BIR BOR CREF AGND
VOL TREB MIDD BASS ATT
I2C BUS DECODER+ LATCHES
LO SCL SDA DGND RO
2579 3n3
2583 47n
3583 10K
2576 10u
VSOF N17-E3
2570 100n
2586 3n3
2590 47n
2592 10u
3590 10K
2577 10u
N17-A4 5V2
3573 10K
N10-C8
SCL_SOFAC_REAR
SDA
N16-A1
2571 100n
3571 10R
2593 10u
3587 10K
3589 1K5
N17-B4 12VP_IN1
2595 100n
7595-A LM833D
12VN_IN1 N17-A4
3591 10K
2597 33p
N20
0.1V / div DC
0.2ms / div
VL_SL
N12-D3
2594 10u
3593 10K
3594 1K5
7595-B LM833D
2596 100n
3595 10K
2598 33p
N21
0.1V / div DC
0.2ms / div
VL_SR
N12-D3
2695 RES
3671 10K
3673 10K
N16-A4 SEL_SOFAC_1
SEL_SOFAC_0 N16-A4
VDD
MSB LSB LOGIC
7695
HEF4052BT
N10-B5 SCL_SOFAC_REAR
N9-C5 SCL_SOFAC_MIDDLE
N8-C5 SCL_SOFAC_FRONT
LL LH HL HH H L
VSS VEE
3795 22K
7696 BC847B
SCL N16-A1
CL 96532042_021.eps
211201

Multi-Channel Sound Module: Audio Out Select and Connector

0328	B4
0329	D4
2513	C2
2514	D2
2515	D2
2516	E1
2517	E2
2518	E2
2630	A1
2631	D2
3610	A3
3611	A2
4633	E3
4634	E2
4700	B3
4701	C3
4702	D2
4703	E2
4704	E2
4705	E2
4715	B3
4716	B3
4717	B4
4718	B3
4719	B4
4720	C4
5700	C3
5701	D3
5702	D2
5703	E2
5704	E2
5705	E2
7610	A3
7630	B1


1
2
3
4
A
B
C
D
E
N11 Audio Out Select & Connector
N17-D3
VMUX
2630
RES
3611
10K
16
9
10
VDD
MSB
LSB
LOGIC
7610
BC847B
3610
100K
N16-B4
SEL_TO_MCS_LR
7630
HEF4052BT
TO / FROM
0328
OF
K3
0328
4715
RES
4716
RES
4717
RES
4718
RES
AUDIO_SL
4719
RES
4720
RES
AUDIO_R
SND_GND
AUDIO_L
AUDIO_SL
AUDIO_C
+7V7
HP-GND
-7V7
AUDIO_SW
SOUND_ENABLE
DC_PROT
N8-D7
VL_R
N8-B7
VL_L
LL
LH
HL
HH
H
L
4700
5700
RES
2513
RES
4701
5701
RES
2514
RES
VSS
VEE
8
7
6
2631
RES
-VMUX
N17-D3
TO / FROM
0328
OF
A4
N22
0329
N23
N24
N25
N26
N27
2515
RES
4702
5702
RES
N8-D7
VL_SL
2516
RES
4703
5703
RES
N9-A7
VLL_C
DC_PROT
N17-C4
2517
100p
4704
RES
4633
RES
N9-D9
VL_SW_DBE
5704
6u8
2518
RES
4705
5705
RES
N10-C7
VL_SR
4634
DC_PROT | AUDIO_SR

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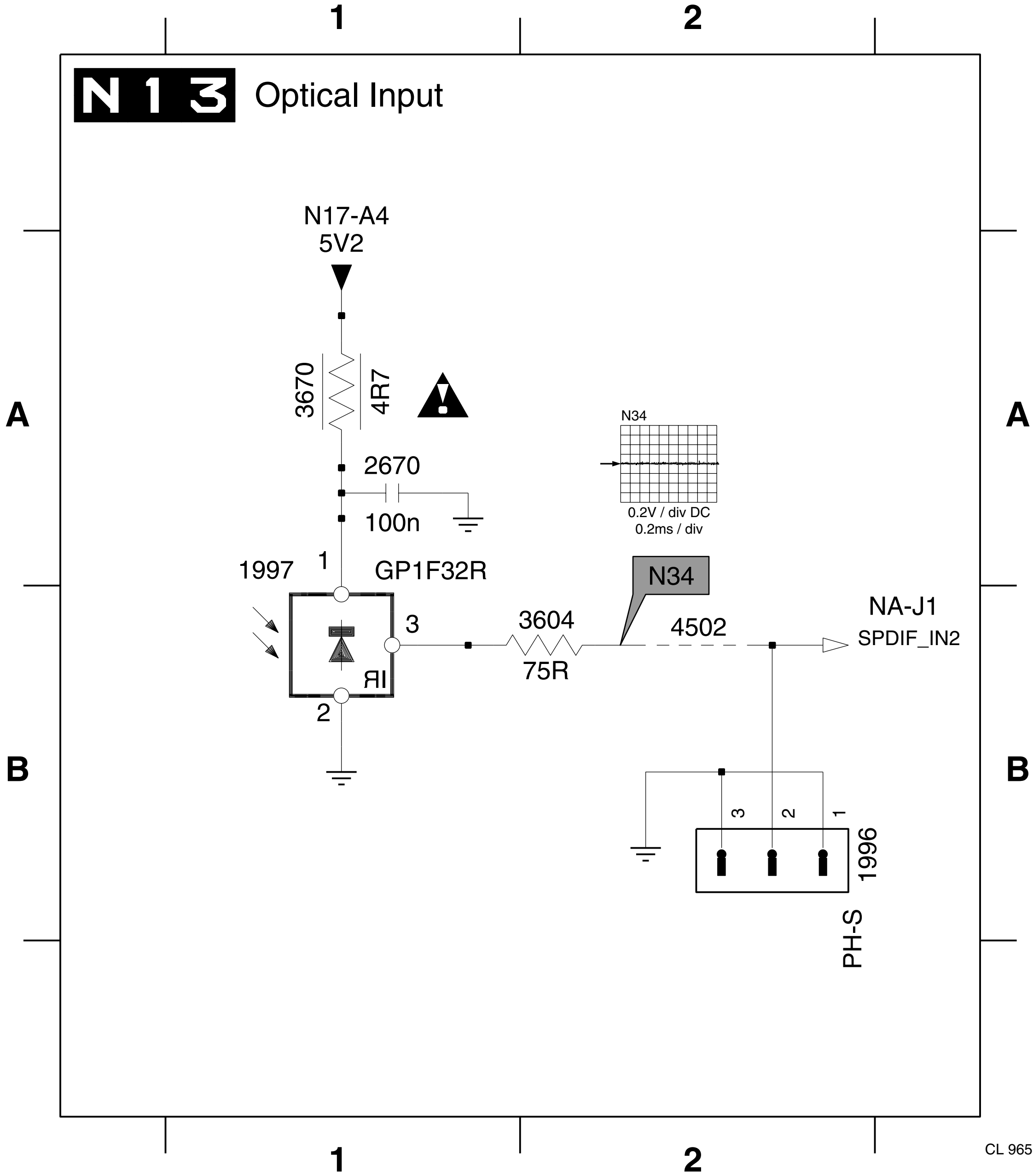
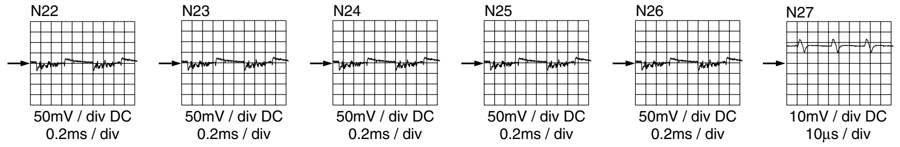
120599

Multi-Channel Sound Module: Optical Input

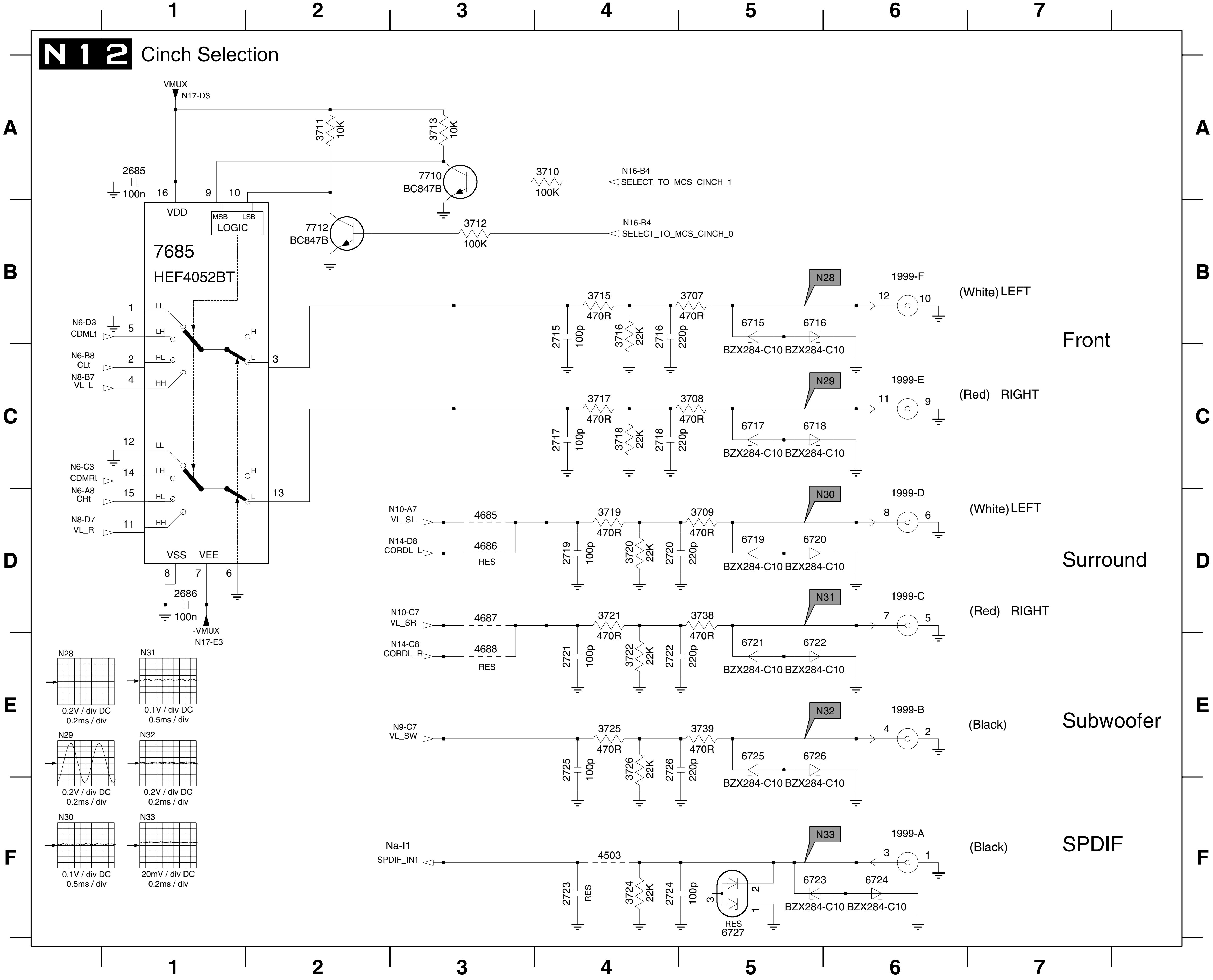
1996	B2
1997	A1
2670	A1
3604	B2
3670	A1
4502	B2


1
2
A
B
N13 Optical Input
N17-A4
5V2
3670
4R7
2670
100n
N34
0.2V / div DC
0.2ms / div
1997
GP1F32R
1
2
3
3604
75R
N34
4502
NA-J1
SPDIF_IN2
1996
PH-S

CL 96532042_024.eps
211201



Multi-Channel Sound Module: Cinch Selection


N12 Cinch Selection
VMUX
N17-D3
2685
100n
16
9
10
VDD
MSB
LSB
LOGIC
7685
HEF4052BT
3711 10K
3713 10K
7710 BC847B
7712 BC847B
3710 100K
3712 100K
N16-B4 SELECT_TO_MCS_CINCH_1
N16-B4 SELECT_TO_MCS_CINCH_0
N6-D3 CDMLt
N6-B8 CLt
N8-B7 VL_L
N6-C3 CDMRt
N6-A8 CRt
N8-D7 VL_R
LL
LH
HL
HH
H
L
1
5
2
4
3
12
14
15
11
13
VSS
VEE
8
7
6
2686
100n
-VMUX
N17-E3
3715 470R
3707 470R
2715 100p
3716 22K
2716 220p
6715
6716
BZX284-C10
N28
1999-F
12
10
(White) LEFT
Front
3717 470R
3708 470R
2717 100p
3718 22K
2718 220p
6717
6718
N29
1999-E
11
9
(Red) RIGHT
N10-A7 VL_SL
N14-D8 CORDL_L
4685
4686 RES
3719 470R
3709 470R
2719 100p
3720 22K
2720 220p
6719
6720
N30
1999-D
8
6
(White) LEFT
Surround
N10-C7 VL_SR
N14-C8 CORDL_R
4687
4688 RES
3721 470R
3738 470R
2721 100p
3722 22K
2722 220p
6721
6722
N31
1999-C
7
5
(Red) RIGHT
N9-C7 VL_SW
3725 470R
3739 470R
2725 100p
3726 22K
2726 220p
6725
6726
N32
1999-B
4
2
(Black)
Subwoofer
Na-I1 SPDIF_IN1
4503
2723 RES
3724 22K
2724 100p
RES 6727
6723
6724
N33
1999-A
3
1
(Black)
SPDIF
N28 0.2V / div DC 0.2ms / div
N31 0.1V / div DC 0.5ms / div
N29 0.2V / div DC 0.2ms / div
N32 0.2V / div DC 0.2ms / div
N30 0.1V / div DC 0.5ms / div
N33 20mV / div DC 0.2ms / div
1 2 3 4 5 6 7
A B C D E F

1999-A	F6
1999-B	E6
1999-C	D6
1999-D	D6
1999-E	C6
1999-F	B6
2685	A1
2686	D1
2715	B4
2716	B4
2717	C4
2718	C4
2719	D4
2720	D4
2721	E4
2722	E4
2723	F4
2724	F4
2725	E4
2726	E4
3707	B5
3708	C5
3709	D5
3710	A4
3711	A2
3712	B3
3713	A3
3715	B4
3716	B4
3717	C4
3718	C4
3719	D4
3720	D4
3721	D4
3722	E4
3724	F4
3725	E4
3726	E4
3738	D5
3739	E5
4503	F4
4685	D3
4686	D3
4687	D3
4688	E3
6715	B5
6716	B5
6717	C5
6718	C5
6719	D5
6720	D5
6721	E5
6722	E5
6723	F5
6724	F6
6725	E5
6726	E5
6727	F5
7685	B1
7710	A3
7712	B2

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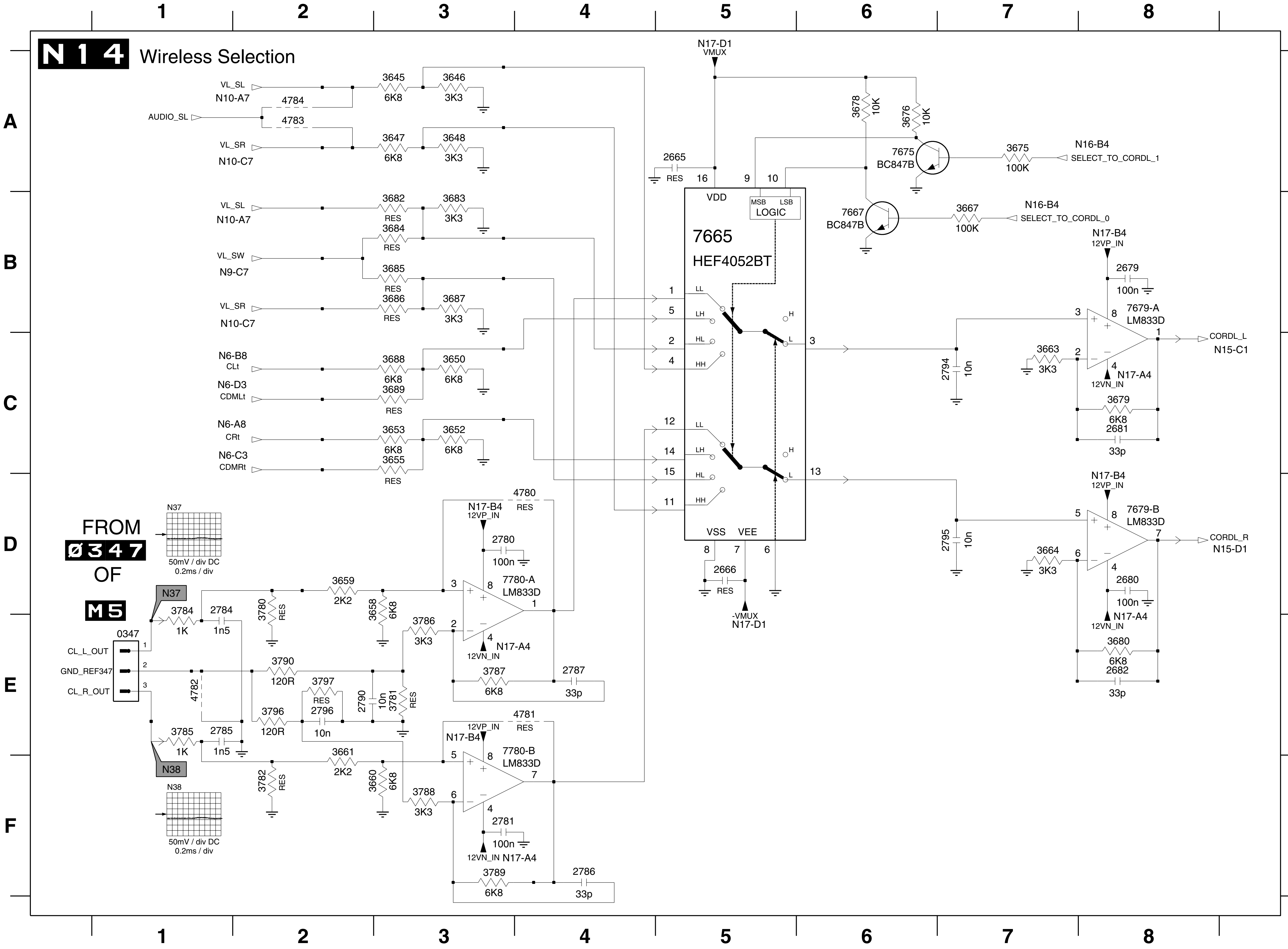
211201

Multi-Channel Sound Module: Wireless Selection


1 2 3 4 5 6 7 8
A B C D E F
N14 Wireless Selection
VL_SL N10-A7
AUDIO_SL
4784
4783
VL_SR N10-C7
3645 6K8
3646 3K3
3647 6K8
3648 3K3
VL_SL N10-A7
3682 RES
3683 3K3
3684 RES
VL_SW N9-C7
3685 RES
VL_SR N10-C7
3686 RES
3687 3K3
N6-B8 CLt
3688 6K8
3650 6K8
N6-D3 CDMLt
3689 RES
N6-A8 CRt
3653 6K8
3652 6K8
N6-C3 CDMRt
3655 RES
N17-D1 VMUX
2665 RES
16 9 10
VDD
MSB LSB LOGIC
7665
HEF4052BT
1 LL
5 LH
2 HL
4 HH
H L 3
12 LL
14 LH
15 HL
11 HH
H L 13
VSS VEE
8 7 6
2666 RES
-VMUX N17-D1
3678 10K
3676 10K
7675 BC847B
3675 100K
N16-B4 SELECT_TO_CORDL_1
7667 BC847B
3667 100K
N16-B4 SELECT_TO_CORDL_0
N17-B4 12VP_IN
2679 100n
7679-A LM833D
3 8 1 2 4
CORDL_L N15-C1
2794 10n
3663 3K3
N17-A4 12VN_IN
3679 6K8
2681 33p
N17-B4 12VP_IN
7679-B LM833D
5 8 7 6 4
CORDL_R N15-D1
2795 10n
3664 3K3
2680 100n
N17-A4 12VN_IN
3680 6K8
2682 33p
FROM 0347 OF M5
N37
50mV / div DC 0.2ms / div
N37
3784 1K
2784 1n5
3780 RES
3659 2K2
3658 6K8
3786 3K3
4780 RES
N17-B4 12VP_IN
2780 100n
7780-A LM833D
3 8 1 2 4
N17-A4 12VN_IN
3787 6K8
2787 33p
0347
CL_L_OUT 1
GND_REF347 2
CL_R_OUT 3
4782
3790 120R
3797 RES
2796 10n
3796 120R
2790 10n
3781 RES
3785 1K
2785 1n5
N38
4781 RES
12VP_IN N17-B4
7780-B LM833D
5 8 7 6 4
3782 RES
3661 2K2
3660 6K8
3788 3K3
2781 100n
12VN_IN N17-A4
3789 6K8
2786 33p
N38
50mV / div DC 0.2ms / div

0347	E1
2665	A5
2666	D5
2679	B8
2680	D8
2681	C8
2682	E8
2780	D3
2781	F3
2784	D1
2785	E1
2786	F4
2787	E4
2790	E2
2794	C7
2795	D7
2796	E2
3645	A3
3646	A3
3647	A3
3648	A3
3650	C3
3652	C3
3653	C3
3655	C3
3658	D3
3659	D2
3660	F3
3661	E2
3663	C7
3664	D7
3667	B7
3675	A7
3676	A6
3678	A6
3679	C8
3680	E8
3682	B3
3683	B3
3684	B3
3685	B3
3686	B3
3687	B3
3688	C3
3689	C3
3780	D2
3781	E3
3782	F2
3784	D1
3785	E1
3786	E3
3787	E3
3788	F3
3789	F3
3790	E2
3796	E2
3797	E2
4780	D4
4781	E4
4782	E1
4783	A2
4784	A2
7665	B5
7667	B6
7675	A6
7679-A	B8
7679-B	D8
7780-A	D3
7780-B	E3

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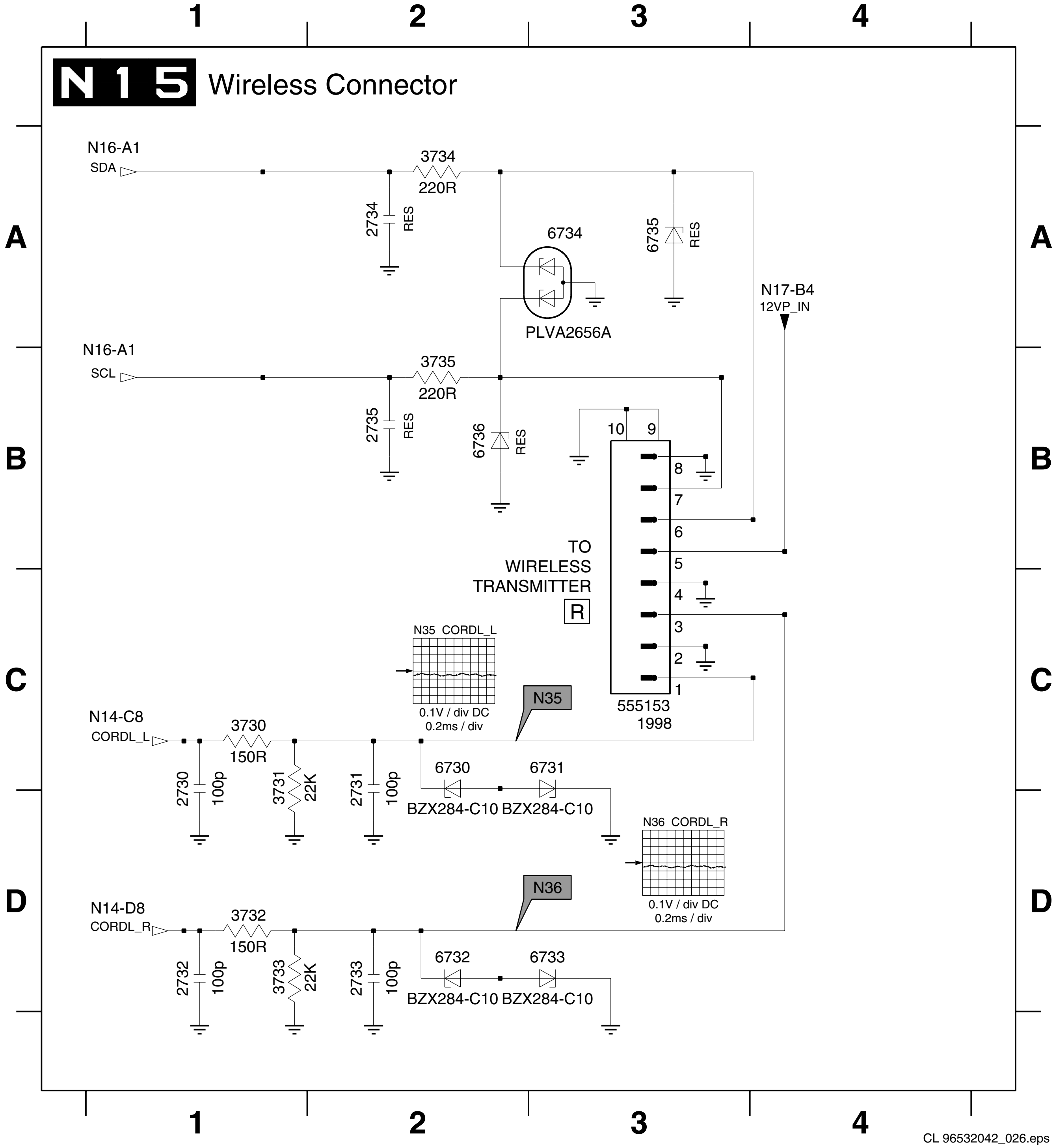
211201

Multi-Channel Sound Module: Wireless Connector

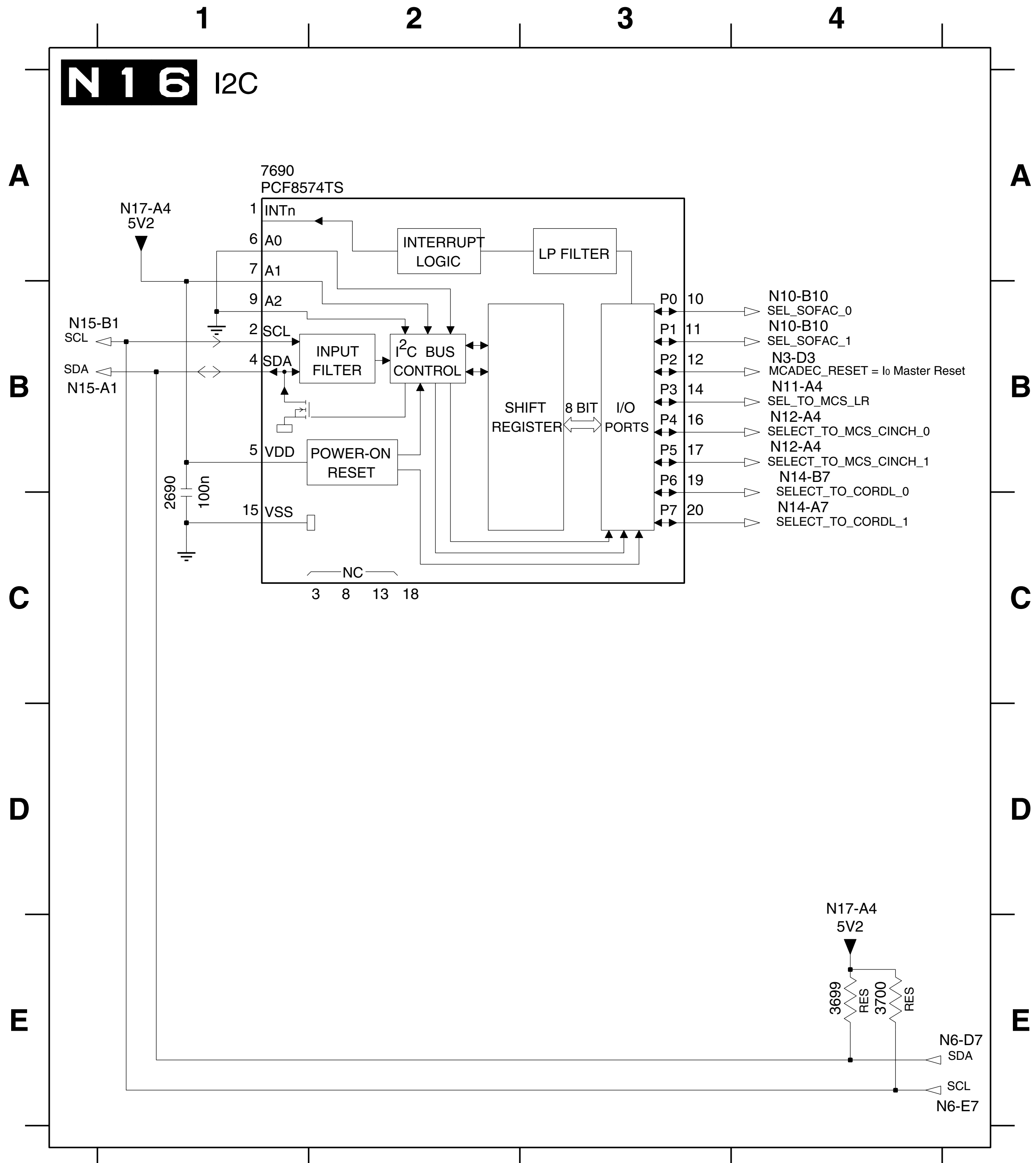
1998 C3 2731 C2 2733 D2 2735 B2 3731 C1 3733 D1 3735 B2 6731 C3 6733 D3 6735 A3
2730 C1 2732 D1 2734 A2 3730 C1 3732 D1 3734 A2 6730 C2 6732 D2 6734 A3 6736 B2


N15 Wireless Connector
N16-A1
SDA
3734
220R
2734
RES
6734
6735
RES
PLVA2656A
N17-B4
12VP_IN
N16-A1
SCL
3735
220R
2735
RES
6736
RES
10
9
8
7
6
5
4
3
2
1
TO
WIRELESS
TRANSMITTER
R
N35 CORDL_L
0.1V / div DC
0.2ms / div
N35
555153
1998
N14-C8
CORDL_L
3730
150R
2730
100p
3731
22K
2731
100p
6730
6731
BZX284-C10
BZX284-C10
N36 CORDL_R
0.1V / div DC
0.2ms / div
N36
N14-D8
CORDL_R
3732
150R
2732
100p
3733
22K
2733
100p
6732
6733
BZX284-C10
BZX284-C10
1
2
3
4
A
B
C
D

CL 96532042_026.eps
211201

Multi-Channel Sound Module: I^{2}C

2690 B1 3699 E4 3700 E4 7690 A1


N16 I2C
7690
PCF8574TS
N17-A4
5V2
1 INTn
6 A0
7 A1
9 A2
2 SCL
4 SDA
5 VDD
15 VSS
INTERRUPT LOGIC
LP FILTER
INPUT FILTER
I2C BUS CONTROL
SHIFT REGISTER
8 BIT
I/O PORTS
POWER-ON RESET
NC
3 8 13 18
N15-B1
SCL
SDA
N15-A1
2690
100n
P0 10 N10-B10 SEL_SOFAC_0
P1 11 N10-B10 SEL_SOFAC_1
P2 12 N3-D3 MCADEC_RESET = I0 Master Reset
P3 14 N11-A4 SEL_TO_MCS_LR
P4 16 N12-A4 SELECT_TO_MCS_CINCH_0
P5 17 N12-A4 SELECT_TO_MCS_CINCH_1
P6 19 N14-B7 SELECT_TO_CORDL_0
P7 20 N14-A7 SELECT_TO_CORDL_1
N17-A4
5V2
3699
RES
3700
RES
N6-D7
SDA
SCL
N6-E7
1
2
3
4
A
B
C
D
E

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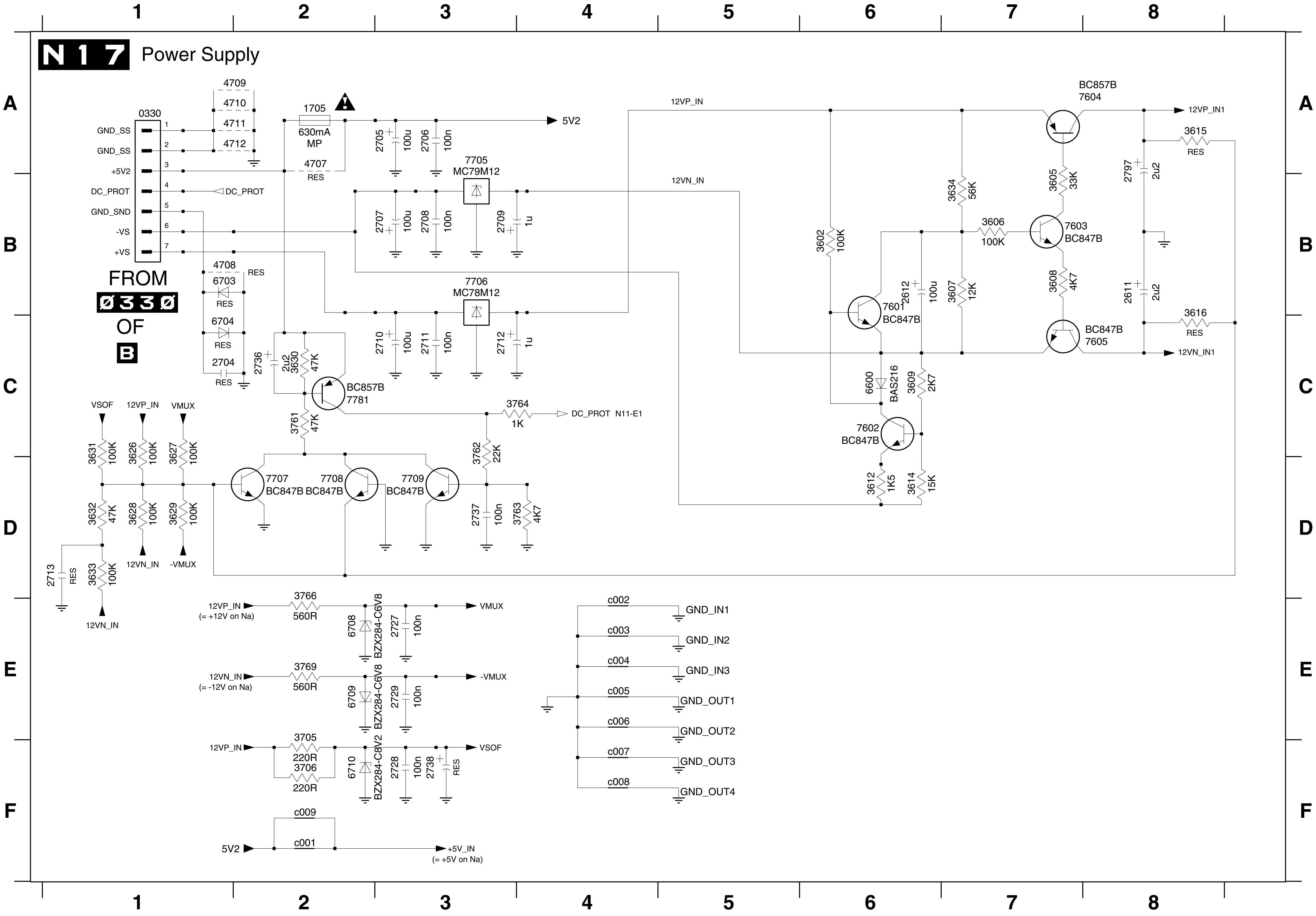
180599

Multi-Channel Sound Module: Power Supply


N17 Power Supply
1 2 3 4 5 6 7 8
A B C D E F
0330
GND_SS
GND_SS
+5V2
DC_PROT
GND_SND
-VS
+VS
FROM 0330 OF B
4709
4710
4711
4712
1705 630mA MP
4707 RES
5V2
2705 100u
2706 100n
7705 MC79M12
2707 100u
2708 100n
2709 1u
4708 RES
6703 RES
6704 RES
2704 RES
7706 MC78M12
2710 100u
2711 100n
2712 1u
2736 2u2
3630 47K
BC857B 7781
3761 47K
3764 1K
DC_PROT N11-E1
3762 22K
VSOF
12VP_IN
VMUX
3631 100K
3626 100K
3627 100K
3632 47K
3628 100K
3629 100K
12VN_IN
-VMUX
2713 RES
3633 100K
7707 BC847B
7708 BC847B
7709 BC847B
2737 100n
3763 4K7
12VP_IN
12VN_IN
BC857B 7604
12VP_IN1
3615 RES
2797 2u2
3605 33K
3634 56K
3606 100K
7603 BC847B
3602 100K
2612 100u
3607 12K
3608 4K7
2611 2u2
7601 BC847B
BC847B 7605
3616 RES
12VN_IN1
6600 BAS216
3609 2K7
7602 BC847B
3612 1K5
3614 15K
12VP_IN (= +12V on Na)
3766 560R
6708 BZX284-C6V8
2727 100n
VMUX
12VN_IN (= -12V on Na)
3769 560R
6709 BZX284-C6V8
2729 100n
-VMUX
12VP_IN
3705 220R
3706 220R
6710 BZX284-C8V2
2728 100n
2738 RES
VSOF
c009
c001
5V2
+5V_IN (= +5V on Na)
c002 GND_IN1
c003 GND_IN2
c004 GND_IN3
c005 GND_OUT1
c006 GND_OUT2
c007 GND_OUT3
c008 GND_OUT4

0330	A1
1705	A2
2611	B8
2612	B6
2704	C1
2705	A3
2706	A3
2707	B3
2708	B3
2709	B3
2710	C3
2711	C3
2712	C3
2713	D1
2727	E3
2728	F3
2729	E3
2736	C2
2737	D3
2738	F3
2797	A8
3602	B6
3605	B7
3606	B7
3607	B7
3608	B7
3609	C6
3612	D6
3614	D6
3615	A8
3616	C8
3626	C1
3627	C1
3628	D1
3629	D1
3630	C2
3631	C1
3632	D1
3633	D1
3634	B7
3705	F2
3706	F2
3761	C2
3762	C3
3763	D4
3764	C4
3766	E2
3769	E2
4707	A2
4708	B1
4709	A2
4710	A2
4711	A2
4712	A2
6600	C6
6703	B1
6704	C1
6708	E2
6709	E2
6710	F2
7601	B6
7602	C6
7603	B7
7604	A8
7605	C8
7705	A3
7706	B3
7707	D2
7708	D2
7709	D3
7781	C2
c001	F2
c002	E4
c003	E4
c004	E4
c005	E4
c006	E4
c007	F4
c008	F4
c009	F2

CL 96532042_028.eps
180599

Layout MCS Module (Inner Side)

0328 A3
0329 A5
0330 A4
0347 A3
0373 A2
0381 A1
1705 A4
1804 B4
1805 B5
1806 B5
1807 B5
1996 A5
1997 B1
1998 B1
2500 A1
2501 A1
2504 A1
2505 A1
2506 A1
2507 A2
2508 A1
2511 A2
2513 A5
2514 A5
2515 A5
2516 A5
2517 A5
2518 A5
2534 A1
2539 A2
2540 A2
2541 A2
2542 A2
2543 A2
2545 A2
2546 A2
2548 A4
2549 A2
2551 A4
2552 A4
2553 A1
2555 A1
2556 A2
2557 A4
2558 A4
2559 A4
2560 A2
2562 A2
2563 A2
2564 A2
2565 A2
2566 A2
2567 A2
2568 A2
2569 A1
2570 B2
2571 B1
2572 A2
2573 B1
2574 B1
2575 A2
2576 B1
2577 A1
2578 A3
2579 B1
2580 A3
2583 A1
2585 A3
2586 B1
2587 A3
2590 A1
2592 B1
2593 B2
2594 A2
2595 A2
2596 B2
2597 B2
2598 A2
2599 A3
2600 B2
2601 B2
2602 B2
2603 B2
2604 B1
2605 B2
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2608 A3
2609 B2
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2611 A3
2612 A4
2613 B1
2620 B2
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2623 B1
2624 B2
2625 B1
2626 B2
2627 B1
2628 B2
2629 A3
2632 A3
2635 B1
2636 B2
2637 A2
2638 B3
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2641 B3
2643 B2
2667 A3
2668 A3
2669 A3
2690 A5
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2707 A4
2709 A5
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2713 A5
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2744 A1
2745 A1
2746 A1
2747 A1
2749 A1
2752 B1
2753 B1
2755 B1
2780 A2
2781 A3
2786 A2
2787 A3
2791 B3
2793 A2
2794 C2
2795 B2
2797 A4
2807 B5
2811 C4
2812 B4
2813 C4
2814 C4
2815 B4
2816 B4
2818 B4
2819 B4
2823 A5
2826 A5
2827 B5
2828 B5
2829 A5
2830 A5
2831 B5
2832 A5
2835 B4
2836 A5
2838 B5
2839 B5
2840 B3
2842 A4
2843 A4
2844 B3
2846 A3
2848 A4
2853 A3
2855 A4
2857 A3
2859 A3
2861 A3
2863 B4
2867 B4
2870 B4
2871 A4
2874 B4
2876 B4
2879 A3
2881 A3
2884 B4
2885 B5
2886 C4
2887 C4
2888 B4
2889 B4
2890 B4
2891 B4
2892 B5
2893 B5
2894 B5
2901 B3
2903 B4
2906 B3
2907 B3
2908 B3
2909 B5
3500 A1
3501 A1
3502 A1
3503 A1
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3517 A2
3518 A2
3530 A1
3531 A1
3532 A1
3533 A1
3534 A1
3540 A3
3541 A2
3543 A2
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3545 A2
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3547 A4
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3549 A1
3550 A4
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3554 A4
3555 A3
3556 A2
3557 A2
3558 A3
3559 A2
3560 A2
3561 A2
3562 A3
3563 A2
3564 A2
3565 A2
3566 A3
3567 A3
3568 A3
3569 A3
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3573 B1
3574 A3
3575 A3
3576 A3
3577 A5
3578 A5
3579 A2
3580 A2
3581 A2
3582 B1
3583 A1
3584 B1
3585 A2
3587 B2
3589 B2
3590 A1
3591 B2
3592 A3
3593 A2
3594 A2
3595 A2
3596 A3
3601 B2
3602 A3
3603 C2
3604 B1
3605 A3
3606 A4
3607 A3
3608 A3
3609 A3
3612 A3
3613 B1
3614 A3
3615 A4
3616 A4
3617 B1
3619 B1
3620 B2
3621 B1
3623 B2
3624 B2
3625 B2
3626 A5
3627 A5
3628 A5
3629 A5
3630 A5
3631 A5
3632 A5
3633 A5
3634 A4
3638 B2
3639 B2
3640 B2
3649 B2
3651 B2
3658 A3
3659 A3
3660 A2
3661 A2
3699 A5
3700 A5
3701 B2
3702 B2
3703 B2
3704 B2
3705 A4
3706 A4
3727 A3
3728 A3
3729 A3
3737 A3
3740 A1
3741 A1
3742 A1
3743 A1
3744 A1
3745 A1
3746 A1
3747 A1
3748 A1
3749 A1
3750 A1
3751 A1
3752 B1
3753 B1
3754 B1
3755 B1
3756 B1
3757 C1
3758 A1
3759 A1
3760 B1
3761 A5
3762 A5
3763 A5
3764 A5
3766 A5
3769 A5
3786 A3
3787 A3
3788 A2
3789 A2
3791 B2
3792 A4
3793 A4
3794 A3
3795 A2
3803 B5
3807 B4
3808 C4
3809 B4
3811 C4
3813 C4
3816 C4
3817 B5
3818 C4
3819 C4
3820 B4
3821 C4
3822 A5
3823 A5
3828 A5
3829 A5
3830 A5
3831 A5
3834 B5
3838 A5
3839 A5
3840 A5
3841 A4
3842 B5
3843 B5
3849 B5
3858 A4
3859 A4
3865 A4
3886 B5
3888 B5
3890 B4
3892 B5
3893 B5
3894 B5
4502 A5
4505 A2
4506 A1
4507 A1
4527 A2
4528 A2
4529 A5
4540 B2
4541 B2
4627 B2
4700 A5
4701 A5
4702 A5
4703 A5
4704 A5
4705 A5
4708 A4
4718 A5
4719 A5
4720 A5
4780 A3
4781 A2
4782 A3
5700 A5
5701 A5
5702 A5
5703 A5
5704 A5
5705 A5
6600 A3
6637 B2
6638 B2
6703 A4
6704 A4
6708 A5
6709 A5
6710 A4
6801 C5
7505 A1
7510 A2
7512 A2
7540 A2
7541 A4
7543 A3
7544 A3
7565 A2
7570 B1
7595 A2
7600 B2
7601 A3
7602 A3
7603 A4
7604 A4
7605 A3
7611 B2
7625 B2
7635 B1
7690 A5
7696 A2
7705 A4
7706 A4
7707 A5
7708 A5
7709 A5
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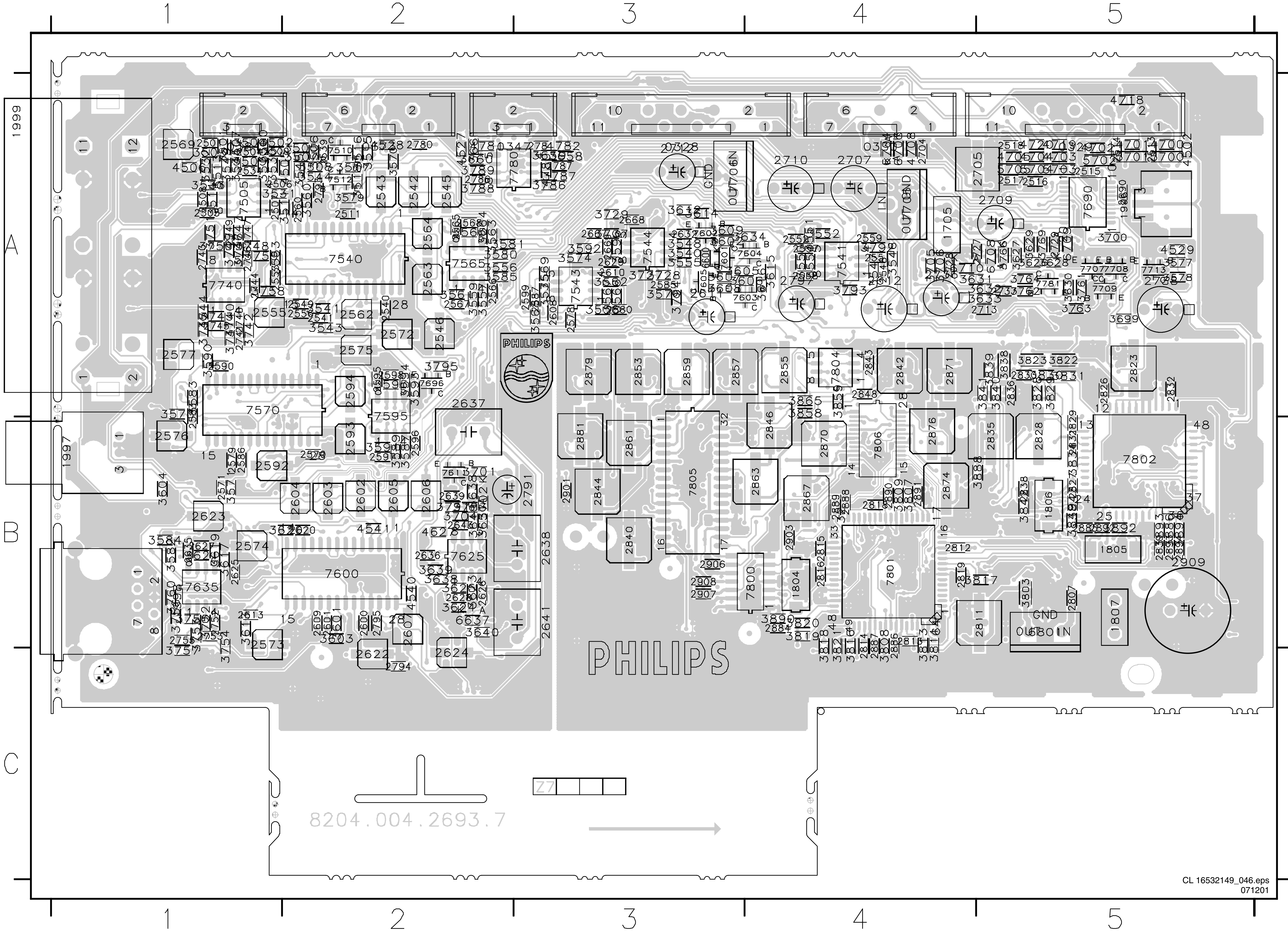
7806 B4



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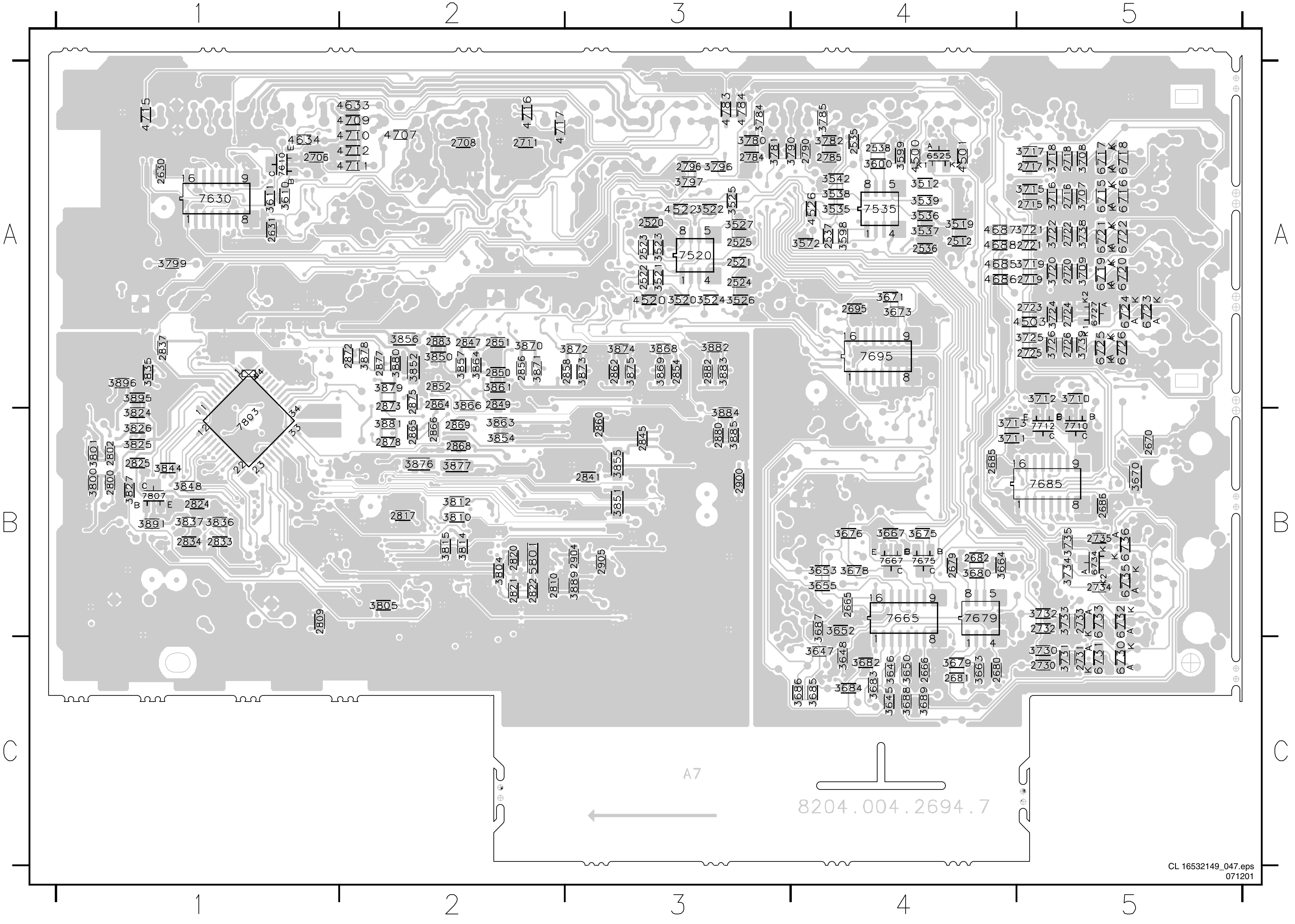
071201

Layout MCS Module (Outer Side)

2512	A4
2520	A3
2521	A3
2522	A3
2523	A3
2524	A3
2525	A3
2535	A4
2536	A4
2537	A4
2538	A4
2630	A1
2631	A1
2665	B4
2666	C4
2670	B5
2679	B4
2680	C4
2681	C4
2682	B4
2685	B4
2686	B5
2695	A4
2706	A1
2708	A2
2711	A2
2715	A5
2716	A5
2717	A5
2718	A5
2719	A5
2720	A5
2721	A5
2722	A5
2723	A5
2724	A5
2725	A5
2726	A5
2730	C5
2731	C5
2732	C5
2733	B5
2734	B5
2735	B5
2784	A3
2785	A4
2790	A4
2796	A3
2800	B1
2802	B1
2809	B1
2810	B2
2817	B2
2820	B2
2821	B2
2822	B2
2824	B1
2825	B1
2833	B1
2834	B1
2837	A1
2841	B3
2845	B3
2847	A2
2849	B2
2850	A2
2851	A2
2852	A2
2854	A3
2856	A2
2858	A2
2860	B3
2862	A3
2864	B2
2865	B2
2866	B2
2868	B2
2869	B2
2872	A1
2873	B2
2875	A2
2877	A2
2878	B2
2880	B3
2882	A3
2883	A2
2900	B3
2904	B3
2905	B3
3512	A4
3519	A4
3520	A3
3521	A3
3522	A3
3523	A3
3524	A3
3525	A3
3526	A3
3527	A3
3535	A4
3536	A4
3537	A4
3538	A4
3539	A4
3542	A4
3572	A4
3598	A4
3599	A4
3600	A4
3610	A1
3611	A1
3645	C4
3646	C4
3647	C4
3648	C4
3650	C4
3652	C4
3653	B4
3655	B4
3663	C4
3664	B4
3667	B4
3670	B5
3671	A4
3673	A4
3675	B4
3676	B4
3678	B4
3679	C4
3680	B4
3682	C4
3683	C4
3684	C4
3685	C4
3686	C4
3687	B4
3688	C4
3689	C4
3707	A5
3708	A5
3709	A5
3710	B5
3711	B4
3712	B5
3713	B4
3715	A5
3716	A5
3717	A5
3718	A5
3719	A5
3720	A5
3721	A5
3722	A5
3724	A5
3725	A5
3726	A5
3730	C5
3731	C5
3732	B5
3733	B5
3734	B5
3735	B5
3738	A5
3739	A5
3780	A3
3781	A3
3782	A4
3784	A3
3785	A4
3790	A4
3796	A3
3797	A3
3799	A1
3800	B1
3801	B1
3804	B2
3805	B2
3810	B2
3812	B2
3814	B2
3815	B2
3824	B1
3825	B1
3826	B1
3827	B1
3835	A1
3836	B1
3837	B1
3844	B1
3848	B1
3850	A2
3851	B3
3852	A2
3854	B2
3855	B3
3856	A2
3857	A2
3861	A2
3863	B2
3864	A2
3866	B2
3868	A3
3869	A3
3870	A2
3871	A2
3872	A3
3873	A3
3874	A3
3875	A3
3876	B2
3877	B2
3878	A2
3879	A2
3880	A2
3881	B2
3882	A3
3883	A3
3884	A3
3885	B3
3889	B3
3891	B1
3895	A1
3896	A1
4500	A4
4501	A4
4503	A5
4520	A3
4522	A3
4526	A4
4633	A2
4634	A1
4685	A4
4686	A4
4687	A4
4688	A4
4707	A2
4709	A2
4710	A2
4711	A2
4712	A2
4715	A1
4716	A2
4717	A2
4783	A3
4784	A3
5801	B2
6525	A4
6715	A5
6716	A5
6717	A5
6718	A5
6719	A5
6720	A5
6721	A5
6722	A5
6723	A5
6724	A5
6725	A5
6726	A5
6727	A5
6730	C5
6731	C5
6732	B5
6733	B5
6734	B5
6735	B5
6736	B5
7520	A3
7535	A4
7610	A1
7630	A1
7665	B4
7667	B4
7675	B4
7679	B4
7685	B5
7695	A4
7710	A5
7712	A5
7803	B1
7807	B1



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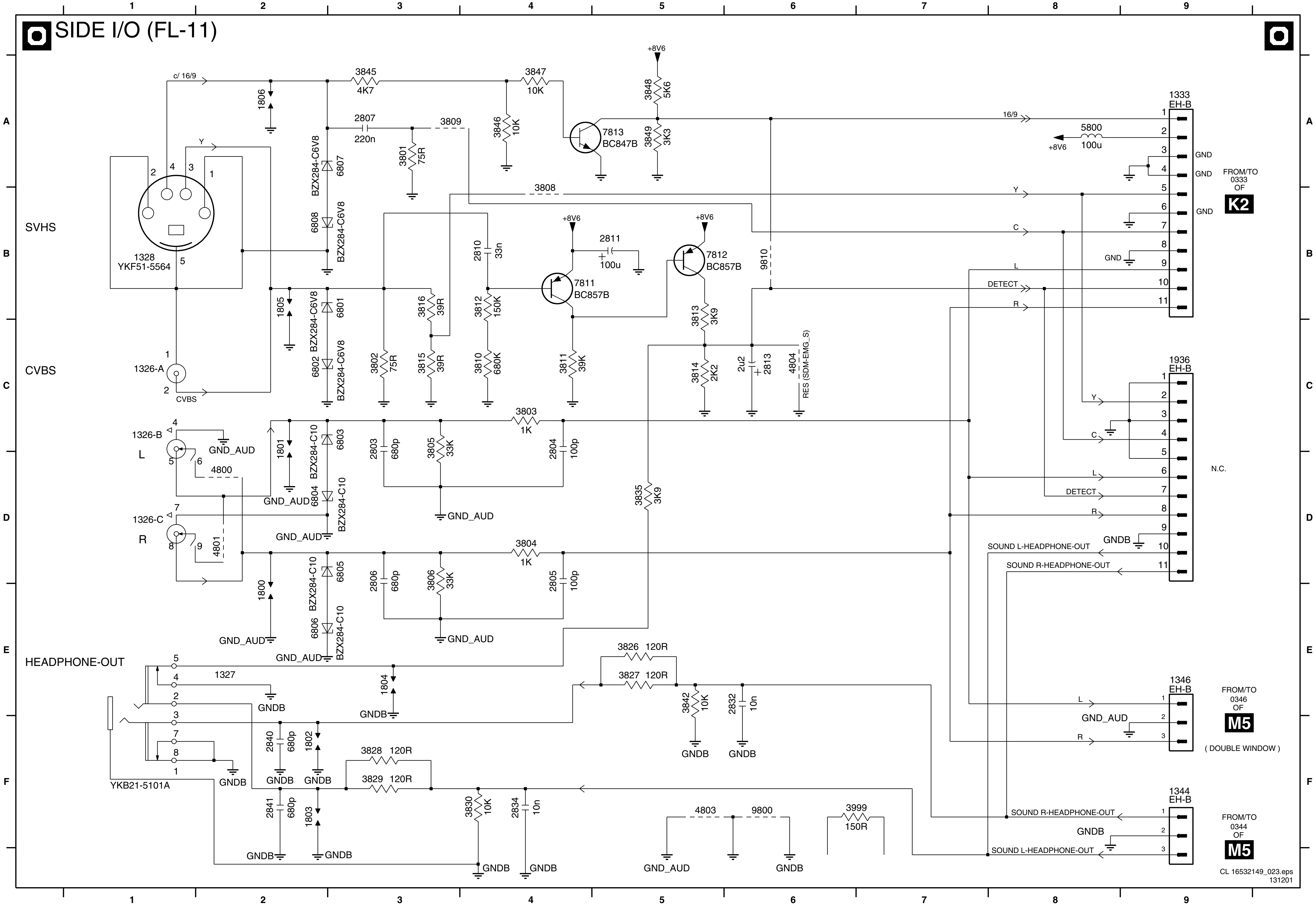
071201

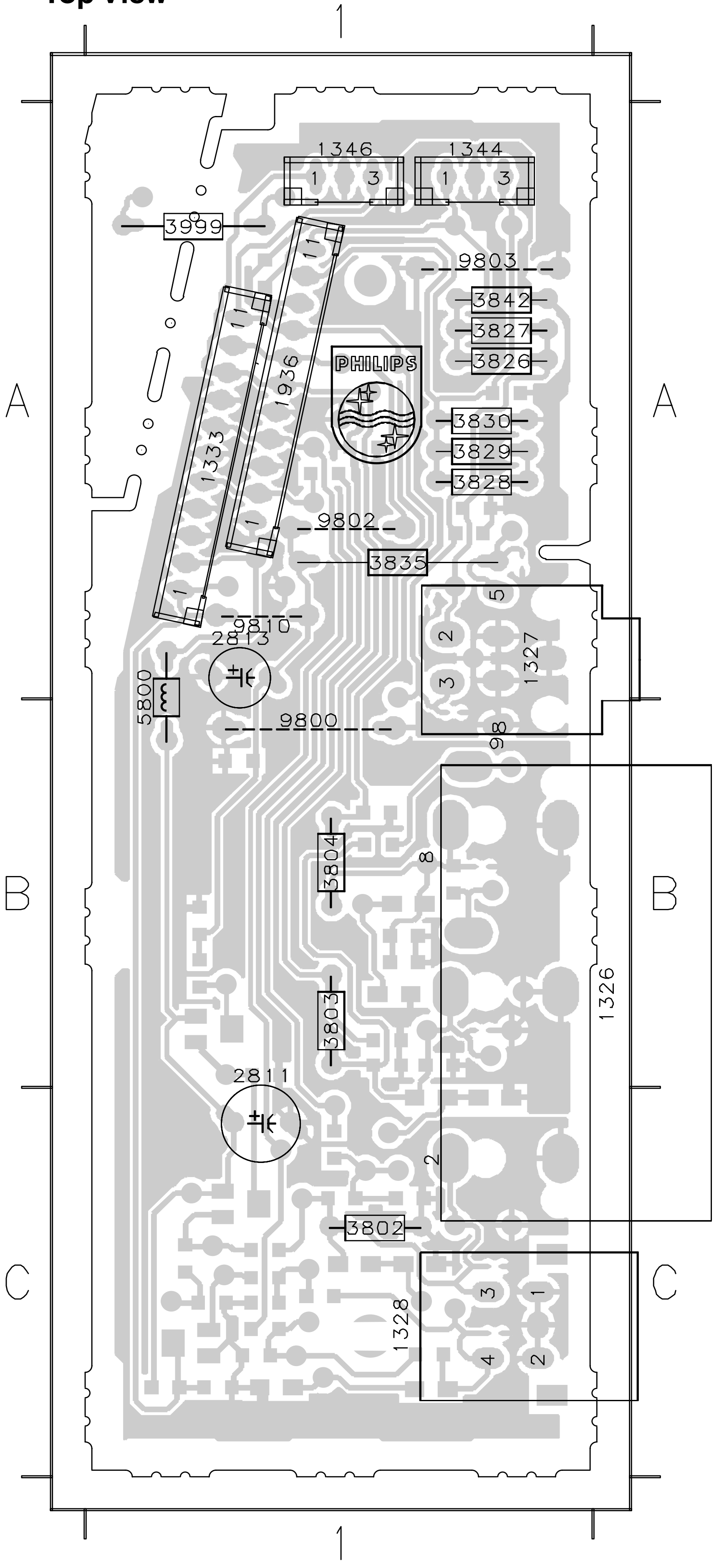
Side I/O Panel: FL11


SIDE I/O (FL-11)
SVHS
1328
YKF51-5564
CVBS
1326-A
1326-B
L
1326-C
R
GND_AUD
4800
4801
HEADPHONE-OUT
1327
YKB21-5101A
GNDB
c/ 16/9
Y
CVBS
1806
1805
1801
1800
1804
1802
1803
3845
4K7
3847
10K
+8V6
3848
5K6
3849
3K3
3846
10K
7813
BC847B
2807
220n
3809
3801
75R
3808
BZX284-C6V8
6807
6808
6801
6802
BZX284-C10
6803
6804
6805
6806
2810
33n
3816
39R
3815
39R
3812
150K
3810
680K
3802
75R
2811
100u
7811
BC857B
7812
BC857B
3811
39K
3813
3K9
3814
2K2
2813
2u2
4804
RES (SDM-EMG_S)
9810
3803
1K
3804
1K
2803
680p
2804
100p
2805
100p
2806
680p
3805
33K
3806
33K
3835
3K9
3826
120R
3827
120R
3842
10K
2832
10n
2840
680p
2841
680p
3828
120R
3829
120R
3830
10K
2834
10n
4803
9800
3999
150R
1333
EH-B
16/9
5800
100u
GND
DETECT
FROM/TO
0333
OF
K2
1936
EH-B
N.C.
SOUND L-HEADPHONE-OUT
SOUND R-HEADPHONE-OUT
1346
EH-B
0346
M5
(DOUBLE WINDOW)
1344
EH-B
0344
CL 16532149_023.eps
131201

1326-A	C1
1326-B	C1
1326-C	D1
1327	E2
1328	B1
1333	A9
1344	F9
1346	E9
1800	E2
1801	C2
1802	F2
1803	F2
1804	E3
1805	B2
1806	A2
1936	C9
2803	C3
2804	C4
2805	D4
2806	D3
2807	A3
2810	B4
2811	B5
2813	C6
2832	E6
2834	F4
2840	F2
2841	F2
3801	A3
3802	C3
3803	C4
3804	D4
3805	C3
3806	D3
3808	B4
3809	A3
3810	C4
3811	C4
3812	B4
3813	B5
3814	C5
3815	C3
3816	B3
3826	E5
3827	E5
3828	F3
3829	F3
3830	F4
3835	D5
3842	E5
3845	A3
3846	A4
3847	A4
3848	A5
3849	A5
3999	F7
4800	D2
4801	D2
4803	F5
4804	C6
5800	A8
6801	B3
6802	C2
6803	C3
6804	D2
6805	D3
6806	E2
6807	A3
6808	B2
7811	B4
7812	B5
7813	A5
9800	F6
9810	B6

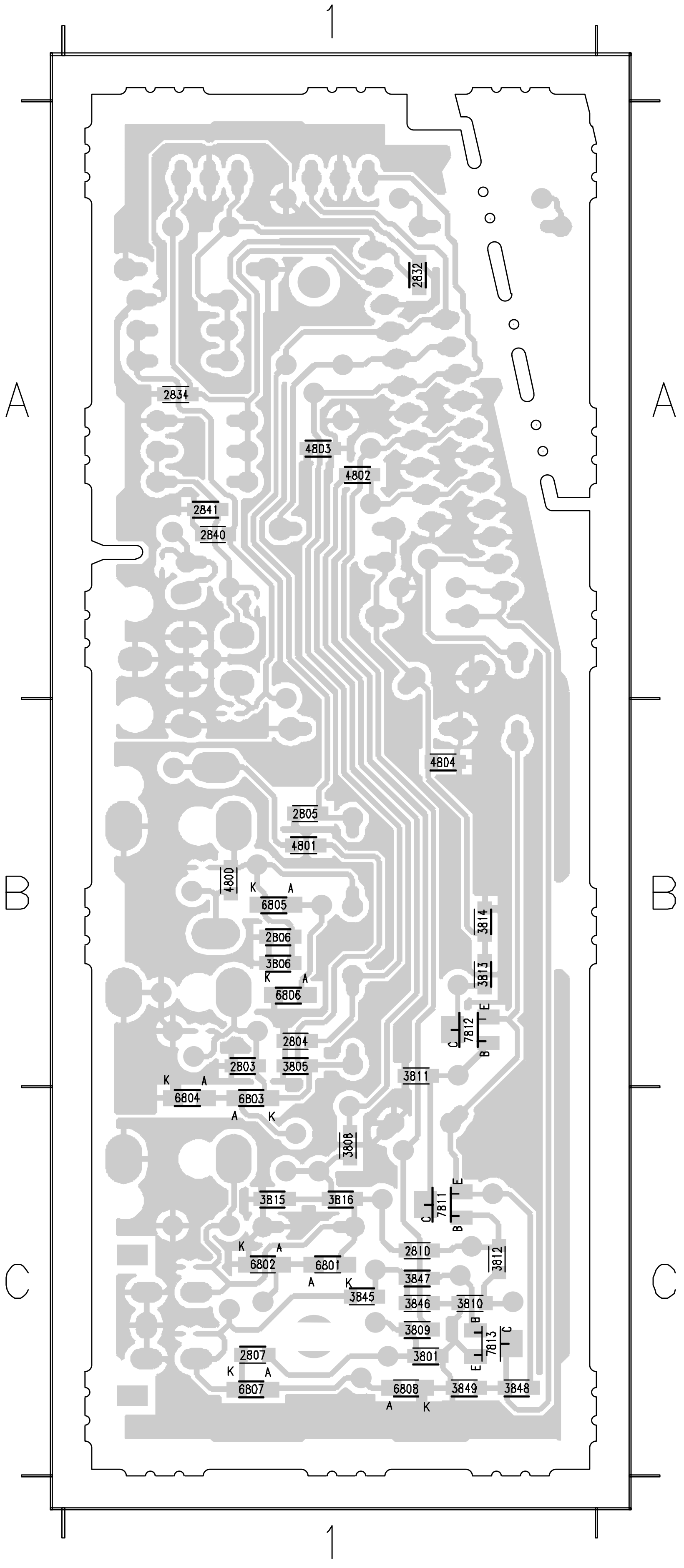
Layout Side I/O Panel

Top View


1
A
B
C
1346
1344
3999
1936
1333
9803
3842
3827
3826
PHILIPS
3830
3829
3828
9802
3835
9810
2813
5800
1327
9800
3804
3803
1326
2811
3802
1328
1

1326	B1
1327	A1
1328	C1
1333	A1
1344	A1
1346	A1
1936	A1
2811	B1
2813	A1
3802	C1
3803	B1
3804	B1
3826	A1
3827	A1
3828	A1
3829	A1
3830	A1
3835	A1
3842	A1
3999	A1
5800	A1
9800	B1
9802	A1
9803	A1
9810	A1

Bottom View

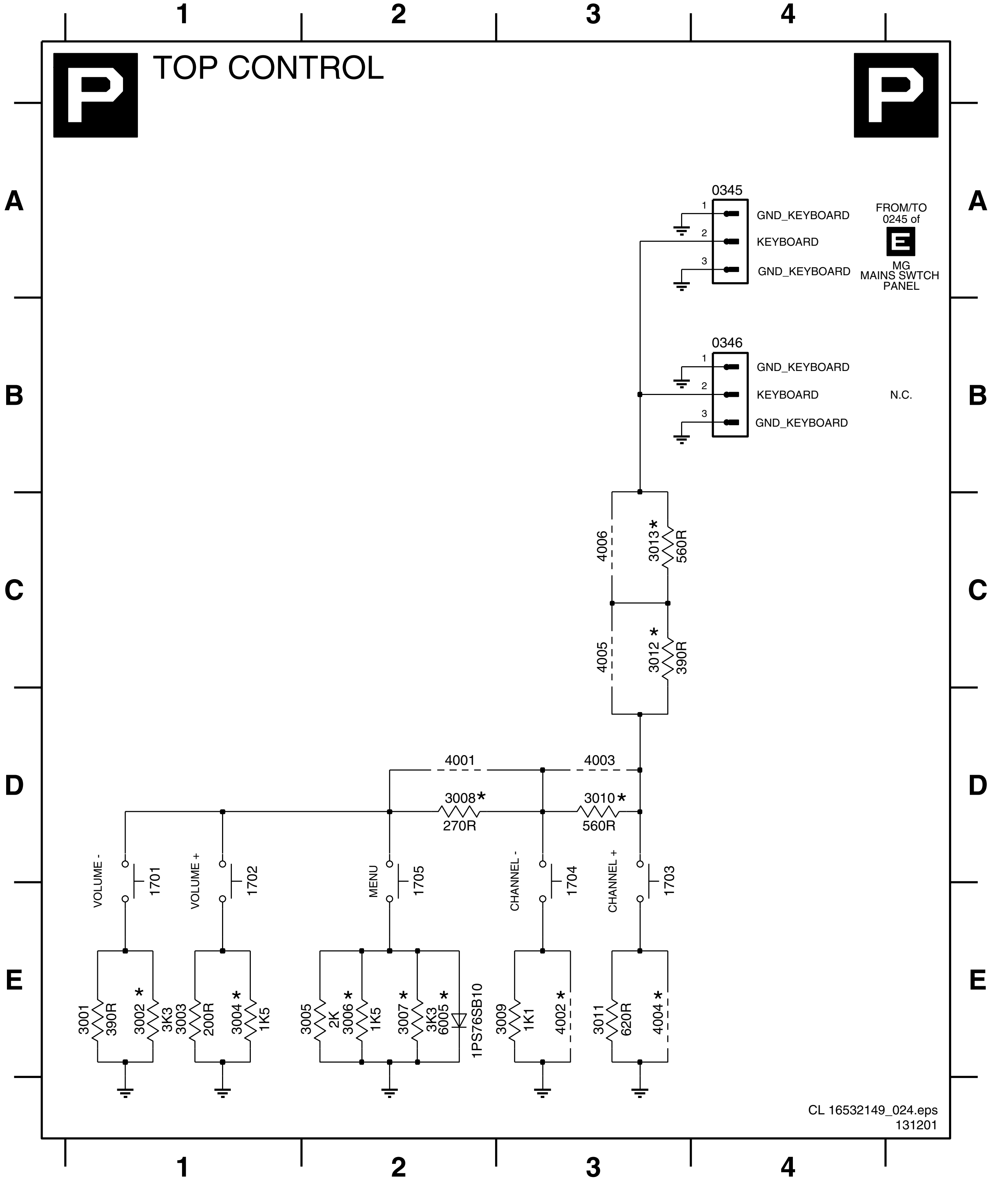

1
A
B
C
2832
2834
4803
4802
2841
2840
4804
2805
4801
4800
6805
2806
3806
6806
3814
3813
7812
2804
2803
3805
3811
6804
6803
3808
3815
3816
7811
6802
6801
2810
3847
3845
3846
3810
3812
3809
7813
3801
2807
6807
6808
3849
3848
1

2803	B1
2804	B1
2805	B1
2806	B1
2807	C1
2810	C1
2832	A1
2834	A1
2840	A1
2841	A1
3801	C1
3805	B1
3806	B1
3808	C1
3809	C1
3810	C1
3811	B1
3812	C1
3813	B1
3814	B1
3815	C1
3816	C1
3845	C1
3846	C1
3847	C1
3848	C1
3849	C1
4800	B1
4801	B1
4802	A1
4803	A1
4804	B1
6801	C1
6802	C1
6803	B1
6804	C1
6805	B1
6806	B1
6807	C1
6808	C1
7811	C1
7812	B1
7813	C1

CL 16532149_048.eps
201201

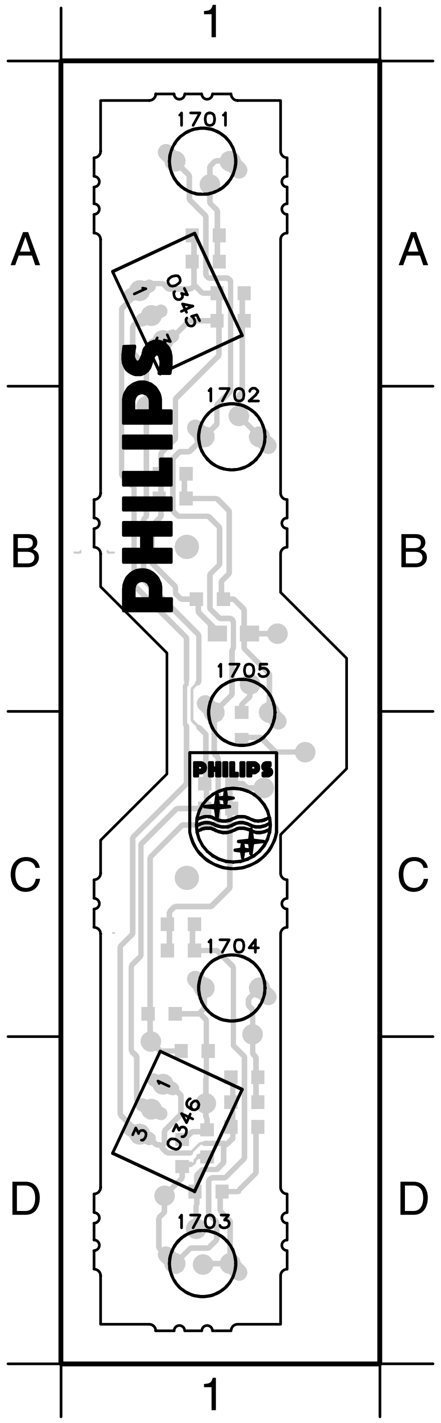
Top Control Panel

0345 A4	1703 D3	3002 E1	3006 E2	3010 D3	3999 D4	4004 E3
0346 B4	1704 D3	3003 E1	3007 E2	3011 E3	4001 D2	4005 C3
1701 D1	1705 D2	3004 E1	3008 D2	3012 C3	4002 E3	4006 C3
1702 D1	3001 E1	3005 E2	3009 E3	3013 C3	4003 D3	6005 E2


1
2
3
4
A
B
C
D
E
P
TOP CONTROL
P
0345
1
2
3
GND_KEYBOARD
KEYBOARD
GND_KEYBOARD
FROM/TO
0245 of
E
MG
MAINS SWTCH
PANEL
0346
1
2
3
GND_KEYBOARD
KEYBOARD
GND_KEYBOARD
N.C.
4006
3013 *
560R
4005
3012 *
390R
4001
4003
3008 *
270R
3010 *
560R
VOLUME -
1701
VOLUME +
1702
MENU
1705
CHANNEL -
1704
CHANNEL +
1703
3001
390R
3002 *
3K3
3003
200R
3004 *
1K5
3005
2K
3006 *
1K5
3007 *
3K3
6005 *
1PS76SB10
3009
1K1
4002 *
3011
620R
4004 *
CL 16532149_024.eps
131201

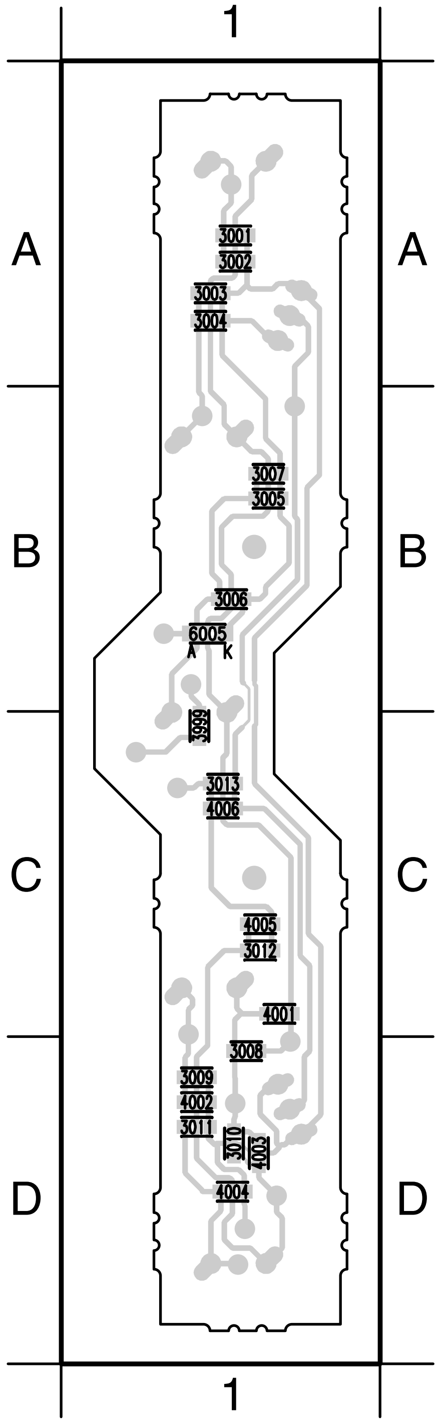
Layout Top Control Panel

Top View


1
A
B
C
D
1701
0345
1
3
PHILIPS
1702
1705
PHILIPS
1704
0346
1703

0345	A1
0346	D1
1701	A1
1702	A1
1703	D1
1704	C1
1705	B1

Bottom View


1
A
B
C
D
3001
3002
3003
3004
3007
3005
3006
6005
A
K
3999
3013
4006
4005
3012
4001
3008
3009
4002
3011
3010
4003
4004

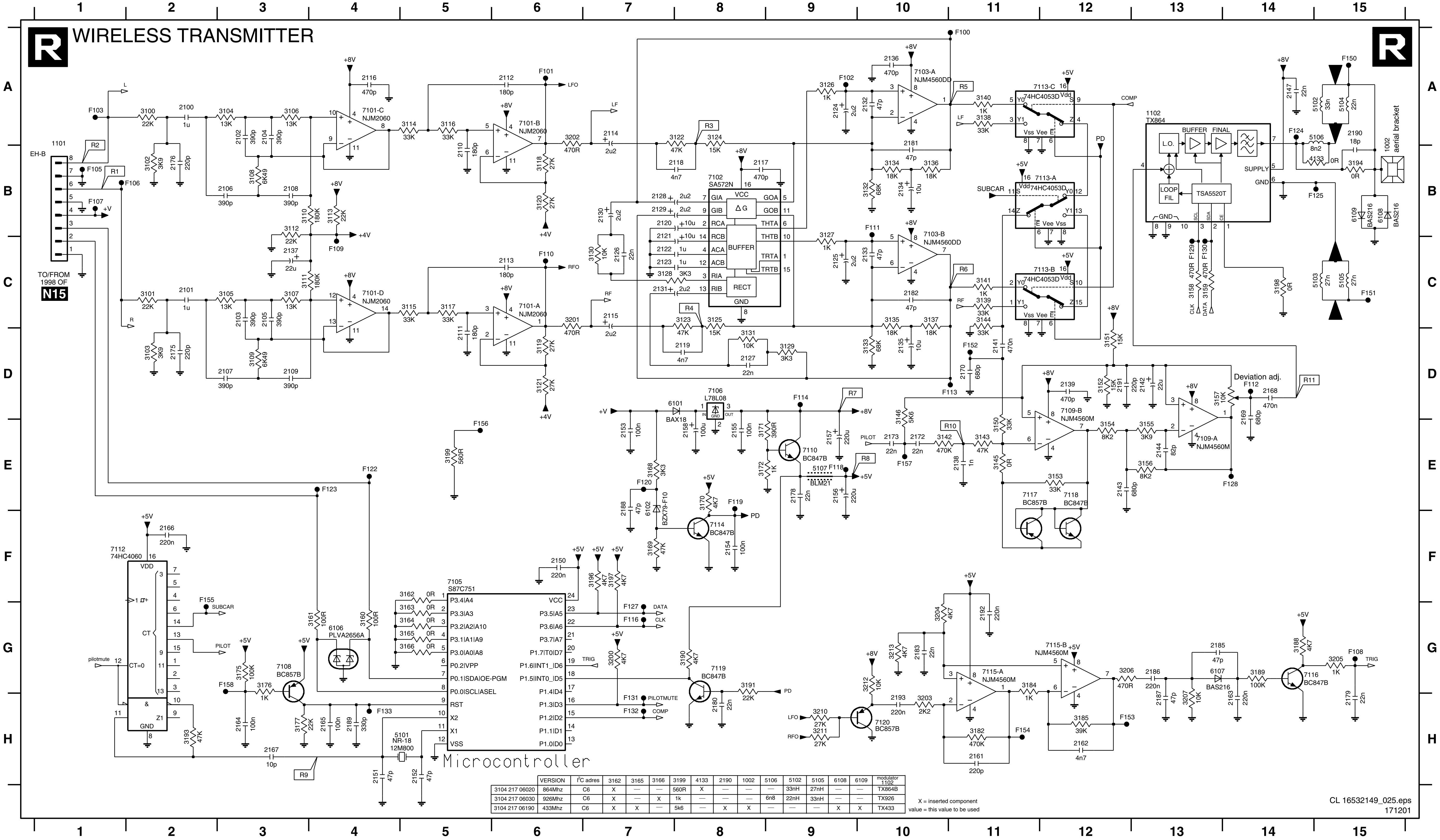
3001	A1
3002	A1
3003	A1
3004	A1
3005	B1
3006	B1
3007	B1
3008	D1
3009	D1
3010	D1
3011	D1
3012	C1
3013	C1
3999	C1
4001	C1
4002	D1
4003	D1
4004	D1
4005	C1
4006	C1
6005	B1

CL 16532149_049.eps
201201

Wireless Transmitter

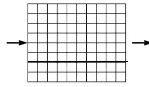
1002 A15	2106 B3	2115 C7	2124 A9	2133 C10	2143 E12	2156 E9	2167 H3	2179 G15	2189 H4	3104 A3	3113 B4	3122 A8	3131 D8	3140 A11	3152 D12
1101 A1	2107 D3	2116 A4	2125 C9	2134 B10	2144 E13	2157 E9	2168 D14	2180 H8	2190 A15	3105 C3	3114 A5	3123 C8	3132 B10	3141 C11	3153 E12
1102 A13	2108 B3	2117 B8	2126 C7	2135 D10	2147 A14	2158 E8	2169 D14	2181 A10	2191 D12	3106 A3	3115 C5	3124 A8	3133 D10	3142 E10	3154 E12
2100 A2	2109 D3	2118 B8	2127 D8	2136 A10	2150 F6	2161 H11	2170 D11	2182 C10	2192 G11	3107 C3	3116 A5	3125 C8	3134 B10	3143 E11	3155 E13
2101 C2	2110 B5	2119 D8	2128 B7	2137 C3	2151 H4	2162 H12	2172 E10	2183 G10	2193 H10	3108 B3	3117 C5	3126 A9	3135 C10	3144 C11	3156 E13
2102 A3	2111 D5	2120 B7	2129 B7	2138 E11	2152 H5	2163 H14	2173 E10	2185 G13	3100 A2	3109 D3	3118 B6	3127 C9	3136 B10	3145 E11	3157 D13
2103 C3	2112 A6	2121 C7	2130 B7	2139 D12	2153 E7	2164 H3	2175 D2	2186 G13	3101 C2	3110 B3	3119 D6	3128 C7	3137 C10	3146 D10	3158 C13
2104 A3	2113 C6	2122 C7	2131 C7	2141 D11	2154 F8	2165 H4	2176 B2	2187 H13	3102 B2	3111 C3	3120 B6	3129 D9	3138 A11	3150 E11	3159 C13
2105 C3	2114 A7	2123 C7	2132 A10	2142 D13	2155 E8	2166 F2	2178 E9	2188 E7	3103 D2	3112 B3	3121 D6	3130 C7	3139 C11	3151 D12	3160 G4

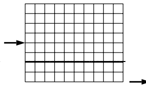
3161 G4	3171 E8	3189 G14	3200 G7	3211 H9	5106 A15	7101-B A6	7109-A E13	7115-B G12	F103 A1	F113 D11	F125 B15	F151 C15			
3162 F5	3172 E8	3190 G8	3201 C6	3212 G10	5107 E9	7101-C A4	7109-B D12	7116 G14	F105 B1	F114 D9	F127 G7	F152 D11			
3163 G5	3175 G3	3191 G8	3202 A6	3213 G10	6101 D8	7101-D C4	7110 E9	7117 E11	F106 B2	F116 G7	F128 E14	F153 H12			
3164 G5	3176 G3	3193 H2	3203 H10	4133 B15	6102 E7	7102 B8	7112 F1	7118 E12	F107 B1	F118 E9	F129 C13	F154 H11			
3165 G5	3177 H3	3194 B15	3204 G10	5101 H5	6106 G4	7103-A A10	7113-A B12	7119 G8	F108 G15	F119 E8	F130 C13	F155 F2			
3166 G5	3182 H11	3196 F7	3205 G15	5102 A15	6107 G13	7103-B B10	7113-B C12	7120 H10	F109 C4	F120 E7	F131 H7	F156 E5			
3168 E7	3184 G11	3197 F7	3206 G12	5103 C15	6108 B15	7105 F5	7113-C A12	F100 A11	F110 C6	F122 E4	F132 H7	F157 E10			
3169 F7	3185 H12	3198 C14	3207 H13	5104 A15	6109 B15	7106 D8	7114 F8	F101 A6	F111 B10	F123 E4	F133 H4	F158 G3			
3170 E8	3188 G14	3199 E5	3210 H9	5105 C15	7101-A C6	7108 G3	7115-A G11	F102 A9	F112 D14	F124 A14	F150 A15				

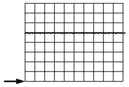

R
WIRELESS TRANSMITTER
1101
EH-B
TO/FROM
1998 OF
N15
R1
R2
R3
R4
R5
R6
R7
R8
R9
R10
R11
L
R
LF
RF
LFO
RFO
PD
COMP
SUBCAR
PILOT
DATA
CLK
TRIG
PILOTMUTE
pilotmute
+8V
+5V
+4V
+V
7101-A NJM2060
7101-B NJM2060
7101-C NJM2060
7101-D NJM2060
7102 SA572N
7103-A NJM4560DD
7103-B NJM4560DD
7113-A 74HC4053D
7113-B 74HC4053D
7113-C 74HC4053D
1102 TX864
L.O.
BUFFER
FINAL
LOOP FIL
TSA5520T
SUPPLY
GND
7105 S87C751
Microcontroller
7106 L78L08
6101 BAX18
6102 BZX79-F10
7110 BC847B
7114 BC847B
7119 BC847B
7108 BC857B
7120 BC857B
7116 BC847B
7117 BC857B
7118 BC847B
7109-A NJM4560M
7109-B NJM4560M
7115-A NJM4560M
7115-B NJM4560M
7112 74HC4060
6106 PLVA2656A
6107 BAS216
6108 BAS216
6109 BAS216
5101 NR-18 12M800
5107 BLM21
Deviation adj.
1002 aerial bracket
CL 16532149_025.eps
171201
A
B
C
D
E
F
G
H
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15

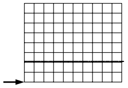
	VERSION	I²C adres	3162	3165	3166	3199	4133	2190	1002	5106	5102	5105	6108	6109	modulator 1102
3104 217 06020	864Mhz	C6	X	—	—	560R	X	—	—	—	33nH	27nH	—	—	TX864B
3104 217 06030	926Mhz	C6	X	—	X	1k	—	—	—	6n8	22nH	33nH	—	—	TX926
3104 217 06190	433Mhz	C6	X	X	—	5k6	—	X	X	—	—	—	X	X	TX433

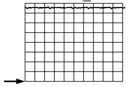
X = inserted component
value = this value to be used

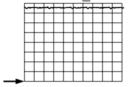
R1 L

50mV / div DC
20ms /div

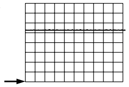
R2 R

50mV / div DC
20ms /div

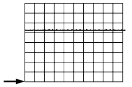
R3 LF

0.5V / div DC
20ms /div

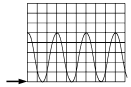
R4 RF

0.5V / div DC
20ms /div

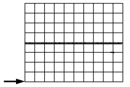
R5 7103_PIN1

0.5V / div DC
20ms /div

R6 7103_PIN7

0.5V / div DC
20ms /div

R7 +8V

2V / div DC
20ms /div

R8 +5V

1V / div DC
20ms /div

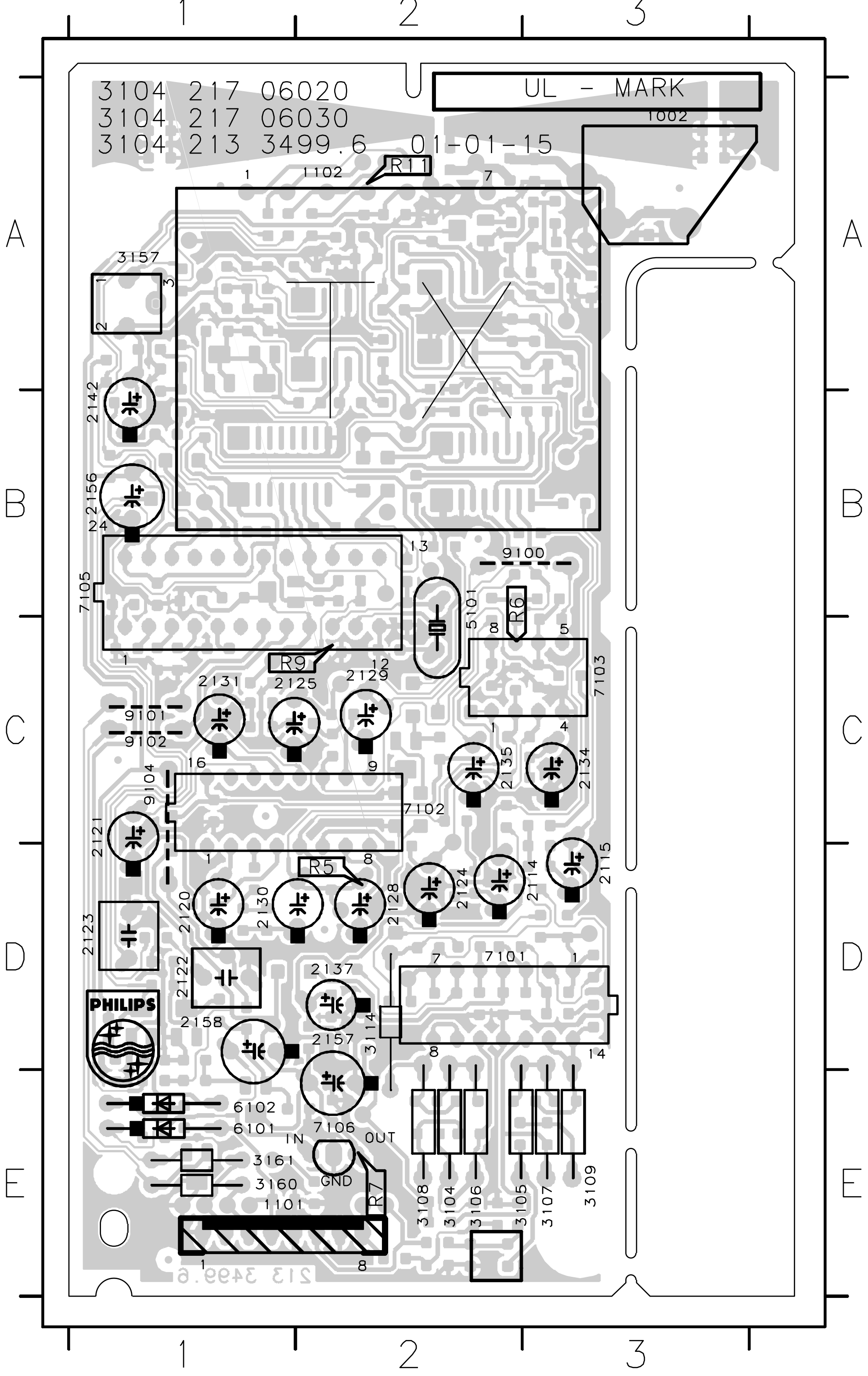
R9 CLOCK

1V / div DC
2ms /div

R10 PILOT

1V / div DC
20ms /div

R11 1102_PIN4

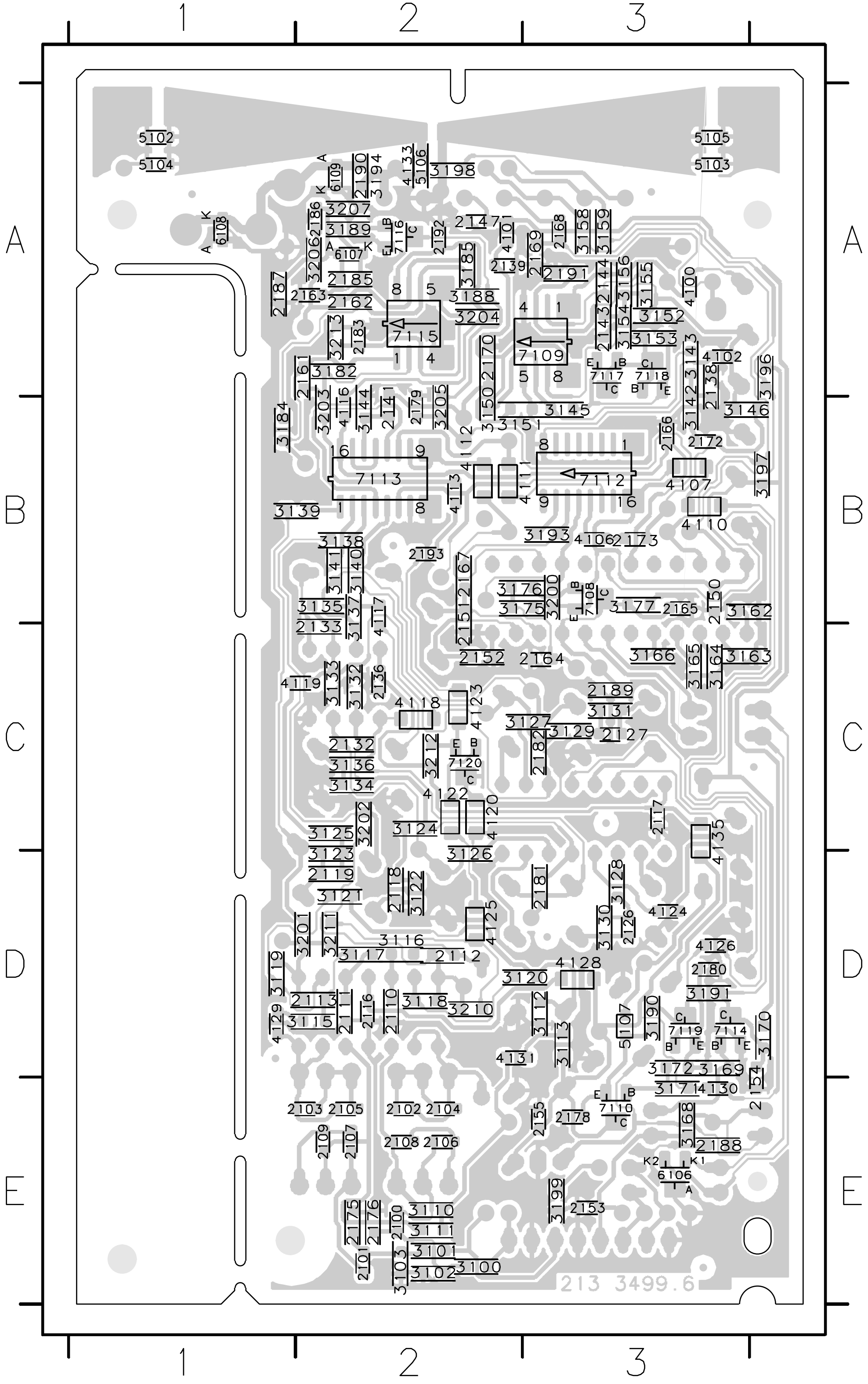
Layout Wireless Transmitter

Top View


1
2
3
A
B
C
D
E
3104 217 06020
3104 217 06030
3104 213 3499.6 01-01-15
UL - MARK
1002
1102
R11
3157
2142
2156
7105
9100
5101
R6
R9
7103
2131
2125
2129
9101
9102
9104
2135
2134
2121
7102
R5
2115
2114
2124
2128
2130
2120
2123
2122
2137
7101
PHILIPS
2158
2157
3114
6102
6101
7106
IN
OUT
GND
3161
3160
1101
R7
3108
3104
3106
3105
3107
3109
213 3499.6

1002	A3
1101	E1
1102	A2
2114	D3
2115	D3
2120	D1
2121	C1
2122	D1
2123	D1
2124	D2
2125	C1
2128	D2
2129	C2
2130	D1
2131	C1
2134	C3
2135	C2
2137	D2
2142	B1
2156	B1
2157	D2
2158	D1
3104	E2
3105	E2
3106	E2
3107	E3
3108	E2
3109	E3
3114	D2
3157	A1
3160	E1
3161	E1
5101	B2
6101	E1
6102	E1
7101	D2
7102	C2
7103	C3
7105	B1
7106	E2
9100	B3
9101	C1
9102	C1
9104	C1

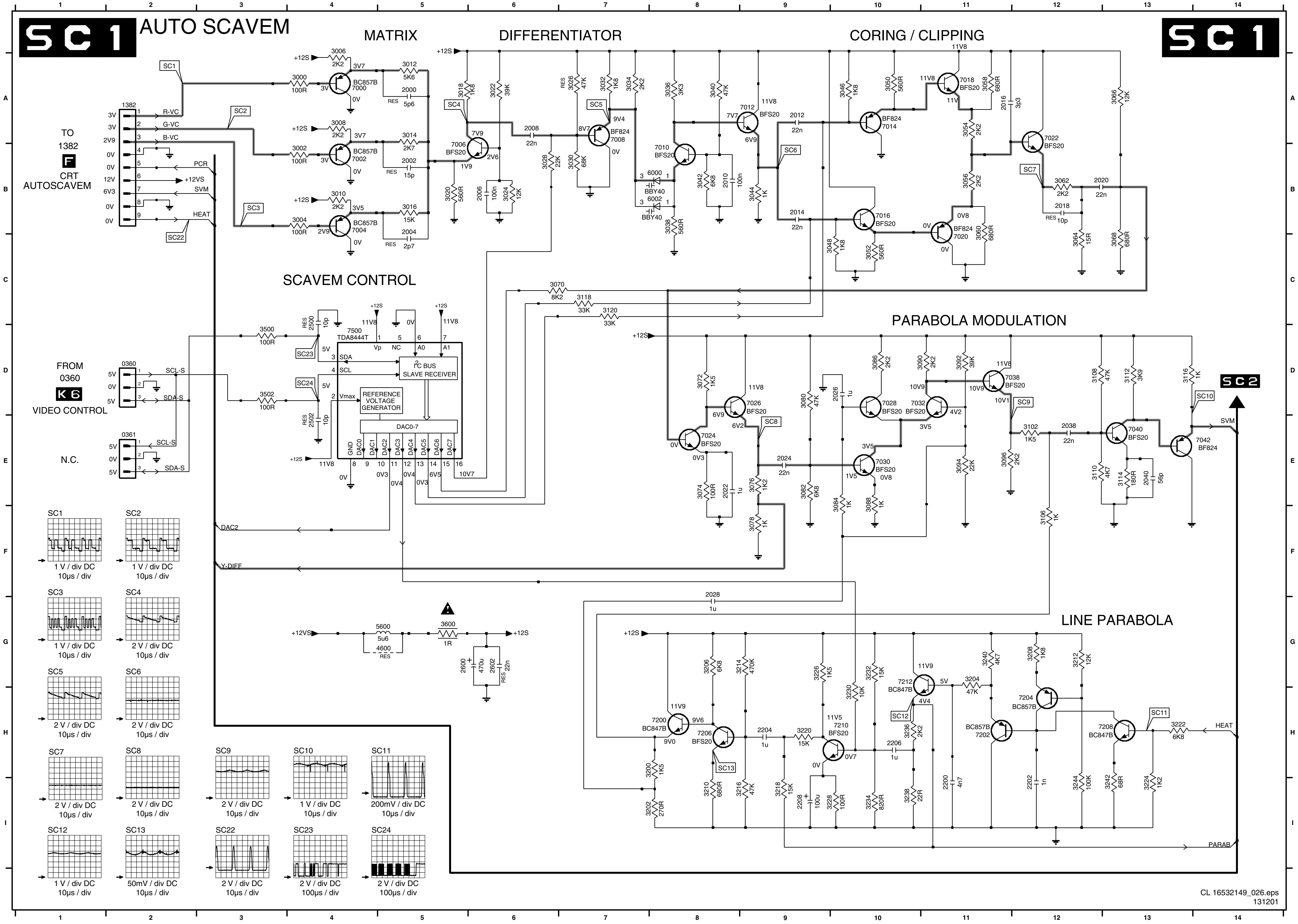
Bottom View


1
2
3
A
B
C
D
E
5102
5104
5105
5103
3198
7115
7109
7113
7112
3139
3193
3176
3175
3177
3162
3166
3163
2152
2164
2189
3131
3127
3129
2127
7120
3124
3126
3116
2112
3120
4128
3191
3172
3169
3171
4130
2188
6106
3110
3111
3101
3102
3100
213 3499.6

2100	E2
2101	E2
2102	E2
2103	E1
2104	E2
2105	E1
2106	E2
2107	E2
2108	E2
2109	E1
2110	D2
2111	D1
2112	D2
2113	D1
2116	D2
2117	C3
2118	D2
2119	D1
2126	D3
2127	C3
2132	C2
2133	C1
2136	C2
2138	A3
2139	A2
2141	B2
2143	A3
2144	A3
2147	A2
2150	B3
2151	B2
2152	C2
2153	E3
2154	E3
2155	E2
2161	A1
2162	A2
2163	A1
2164	C2
2165	B3
2166	B3
2167	B2
2168	A2
2169	A2
2170	A2
2172	B3
2173	B3
2175	E2
2176	E2
2178	E2
2179	B2
2180	D3
2181	D2
2182	C2
2183	A2
2185	A2
2186	A1
2187	A1
2188	E3
2189	C3
2190	A2
2191	A2
2192	A2
2193	B2
3100	E2
3101	E2
3102	E2
3103	E2
3110	E2
3111	E2
3112	D2
3113	D2
3115	D1
3116	D2
3117	D2
3118	D2
3119	D1
3120	D2
3121	D1
3122	D2
3123	D1
3124	C2
3125	C1
3126	D2
3127	C2
3128	D3
3129	C2
3130	D3
3131	C3
3132	C2
3133	C1
3134	C2
3135	B1
3136	C2
3137	B2
3138	B1
3139	B1
3140	B2
3141	B1
3142	B3
3143	A3
3144	B2
3145	B2
3146	B3
3150	B2
3151	B2
3152	A3
3153	A3
3154	A3
3155	A3
3156	A3
3158	A3
3159	A3
3162	B3
3163	C3
3164	C3
3165	C3
3166	C3
3168	E3
3169	D3
3170	D3
3171	E3
3172	D3
3175	B2
3176	B2
3177	B3
3182	A1
3184	B1
3185	A2
3188	A2
3189	A1
3190	D3
3191	D3
3193	B2
3194	A2
3196	A3
3197	B3
3198	A2
3199	E2
3201	D1
3202	C2
3203	B1
3204	A2
3205	B2
3206	A1
3207	A1
3210	D2
3211	D1
3212	C2
3213	A1
3200	B2
4100	A3
4101	A2
4102	A3
4106	B3
4107	B3
4110	B3
4112	B2
4117	B2
4118	C2
4119	C1
4120	C2
4122	C2
4123	C2
4124	D3
4125	D2
4126	D3
4128	D3
4129	D1
4130	E3
4131	D2
4133	A2
4135	C3
4111	B2
4113	B2
4116	B1
5102	A1
5103	A3
5104	A1
5105	A3
5106	A2
5107	D3
6106	E3
6107	A1
6108	A1
6109	A1
7108	B3
7109	A2
7110	E3
7113	B2
7114	D3
7115	A2
7116	A2
7117	A3
7118	A3
7119	D3
7120	C2
7112	B3
F100	D2
F101	D2
F102	C2
F103	E2
F105	E3
F106	E2
F107	E3
F108	B2
F109	E2
F110	D1
F111	C2
F112	A3
F113	C2
F114	D3
F116	B3
F118	D3
F119	B2
F120	E3
F122	E3
F123	E3
F124	A2
F125	A2
F127	B3
F128	A3
F129	A2
F130	A2
F131	B2
F132	B2
F133	C3
F150	A1
F151	A3
F152	B2
F153	A1
F154	B1
F155	B2
F156	E3
F157	B3
F158	C2

CL 16532149_052.eps
201201

Auto SCAVEM

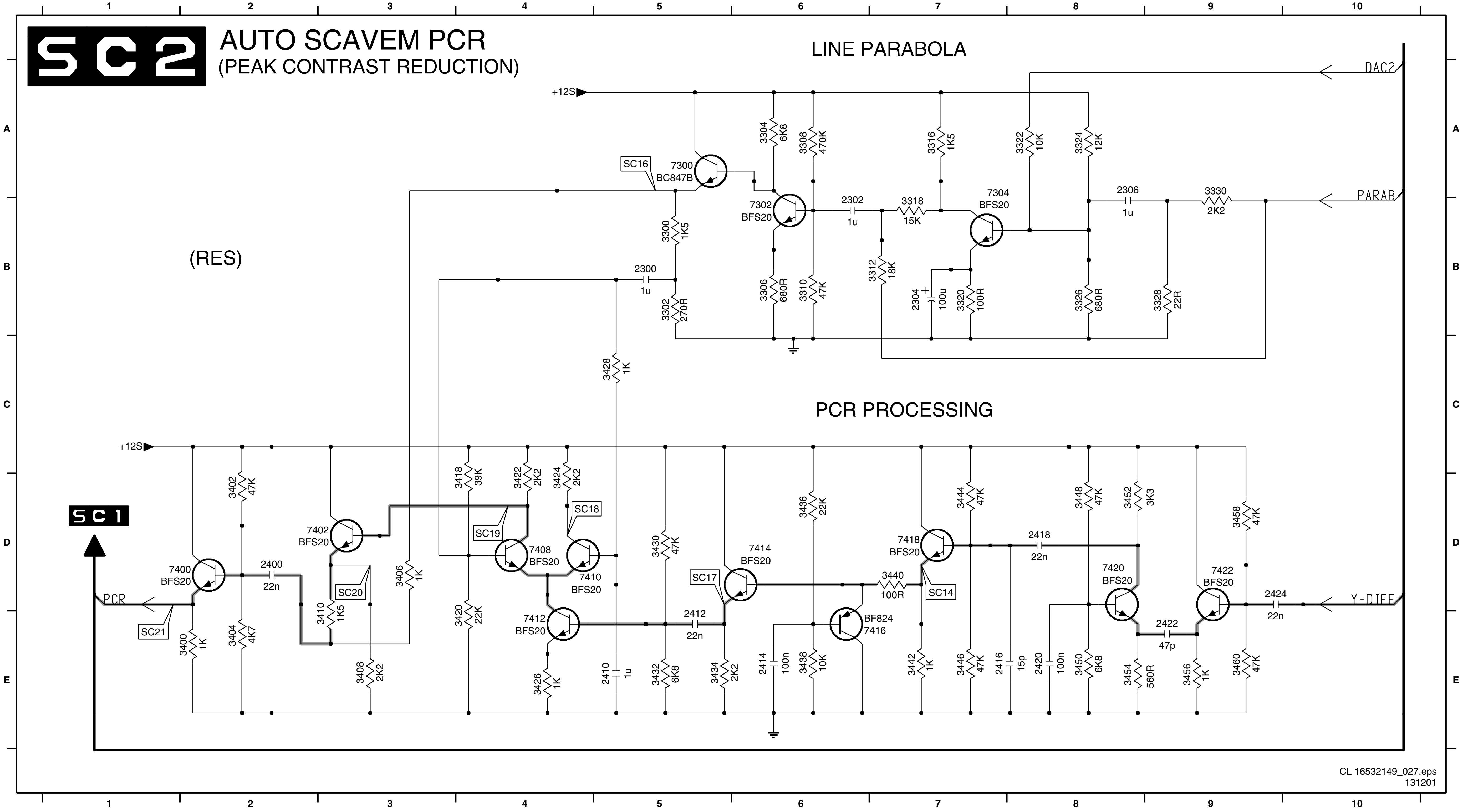

SC1
AUTO SCAVEM
MATRIX
DIFFERENTIATOR
CORING / CLIPPING
SCAVEM CONTROL
PARABOLA MODULATION
LINE PARABOLA
SC2
TO
1382
F
CRT
AUTOSCAVEM
FROM
0360
K6
VIDEO CONTROL
N.C.
R-VC
G-VC
B-VC
PCR
+12VS
SVM
HEAT
SCL-S
SDA-S
DAC2
Y-DIFF
PARAB
TDA8444T
I²C BUS SLAVE RECEIVER
REFERENCE VOLTAGE GENERATOR
DAC0-7
BC857B
BFS20
BF824
BC847B
BBY40
1 V / div DC
10µs / div
2 V / div DC
50mV / div DC
200mV / div DC
100µs / div

CL 16532149_026.eps
131201

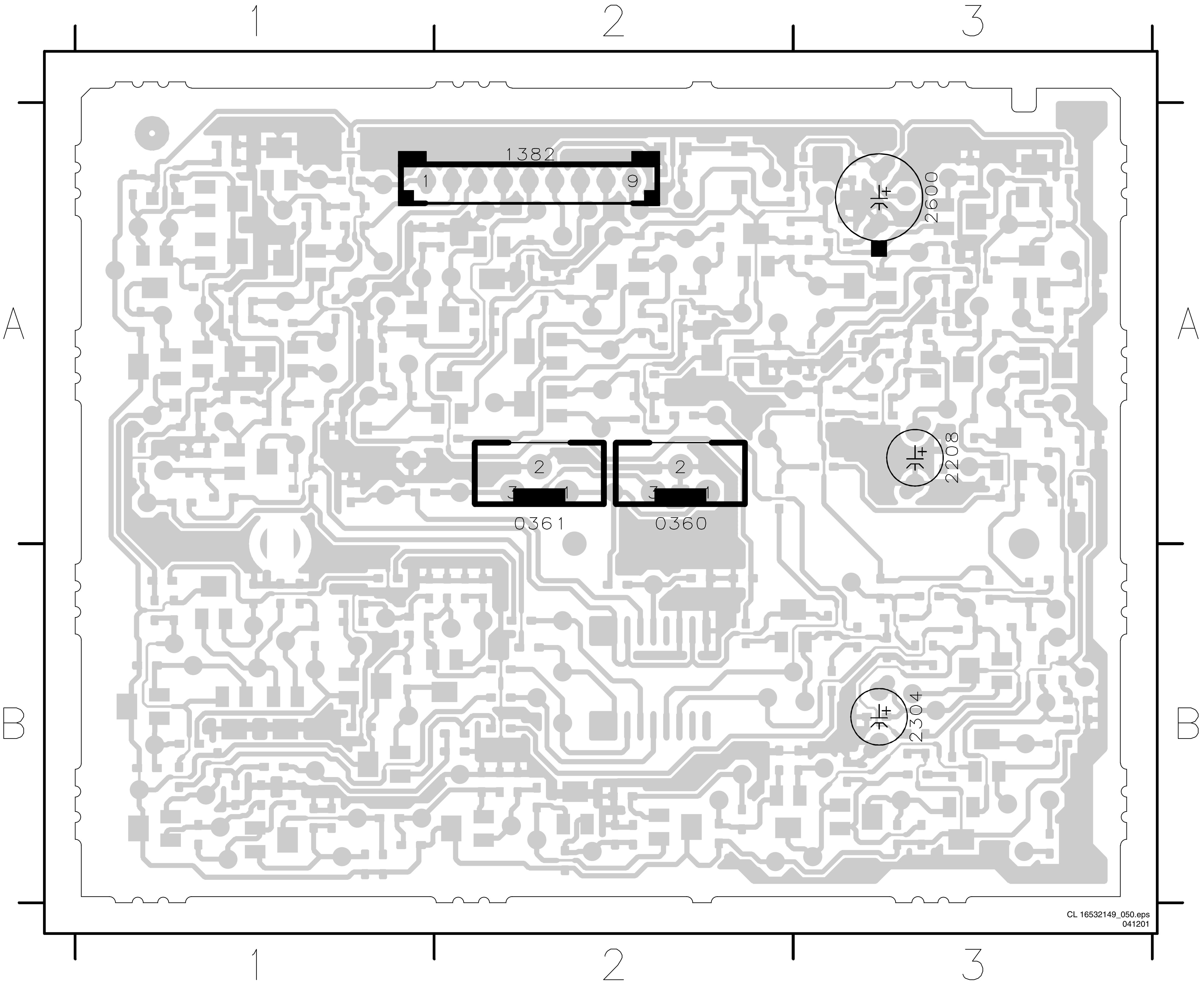
0360	D2
0361	E2
1382	A2
2000	A5
2002	B5
2004	B5
2006	B6
2008	A6
2010	B8
2012	A9
2014	B9
2016	A11
2018	B12
2020	B12
2022	E8
2024	E9
2026	D10
2028	F8
2038	E12
2040	E13
2200	I11
2202	I12
2204	H9
2206	H10
2208	I9
2500	C4
2502	E4
2600	G5
2602	G6
3000	A4
3002	B4
3004	B4
3006	A4
3008	A4
3010	B4
3012	A5
3014	A5
3016	B5
3018	A5
3020	B5
3022	A6
3024	B6
3026	A7
3028	B6
3030	B7
3032	A7
3034	A7
3036	A8
3038	B8
3040	A8
3042	B8
3044	B9
3046	A10
3048	C10
3050	A10
3052	C10
3054	A11
3056	B11
3058	A11
3060	B11
3062	B12
3064	C12
3066	A13
3068	C13
3070	C6
3072	D8
3074	E8
3076	E9
3078	F9
3080	D9
3082	E9
3084	E10
3086	D10
3088	E10
3090	D11
3092	D11
3094	E11
3096	E11
3102	E12
3106	F12
3108	D12
3110	E12
3112	D13
3114	E13
3116	D13
3118	C7
3120	C7
3200	H8
3202	I8
3204	G11
3206	G8
3208	G12
3210	I8
3212	G12
3214	G9
3216	I9
3218	I9
3220	H9
3222	H13
3224	I13
3226	G9
3228	I10
3230	H10
3232	G10
3234	I10
3236	H10
3238	I10
3240	G11
3242	I13
3244	I12
3500	D3
3502	D3
3600	G5
3999	H5
4600	G5
5600	G5
6000	B8
6002	B8
7000	A4
7002	B4
7004	B4
7006	B5
7008	A7
7010	B8
7012	A9
7014	A10
7016	B10
7018	A11
7020	B11
7022	A12
7024	E8
7026	D9
7028	D10
7030	E10
7032	D11
7038	D11
7040	E13
7042	E14
7200	H8
7202	H11
7204	H12
7206	H8
7208	H13
7210	H10
7212	G10
7500	D4

Auto SCAVEM

2300 B5	2410 E5	2420 E8	3304 A6	3316 A7	3326 B8	3404 E2	3420 E4	3430 D5	3440 D7	3450 E8	3460 E9	7402 D3	7416 E6	
2302 B6	2412 E5	2422 E9	3306 B6	3318 B7	3328 B9	3406 D3	3422 D4	3432 E5	3442 E7	3452 D8	7300 A5	7408 D4	7418 D7	
2304 B7	2414 E6	2424 D9	3308 A6	3320 B7	3330 A9	3408 E3	3424 D4	3434 E5	3444 D7	3454 E8	7302 B6	7410 D5	7420 D8	
2306 A8	2416 E7	3300 B5	3310 B6	3322 A8	3400 E2	3410 D3	3426 E4	3436 D6	3446 E7	3456 E9	7304 A8	7412 E4	7422 D9	
2400 D2	2418 D8	3302 B5	3312 B7	3324 A8	3402 D2	3418 D4	3428 C5	3438 E6	3448 D8	3458 D9	7400 D2	7414 D6		

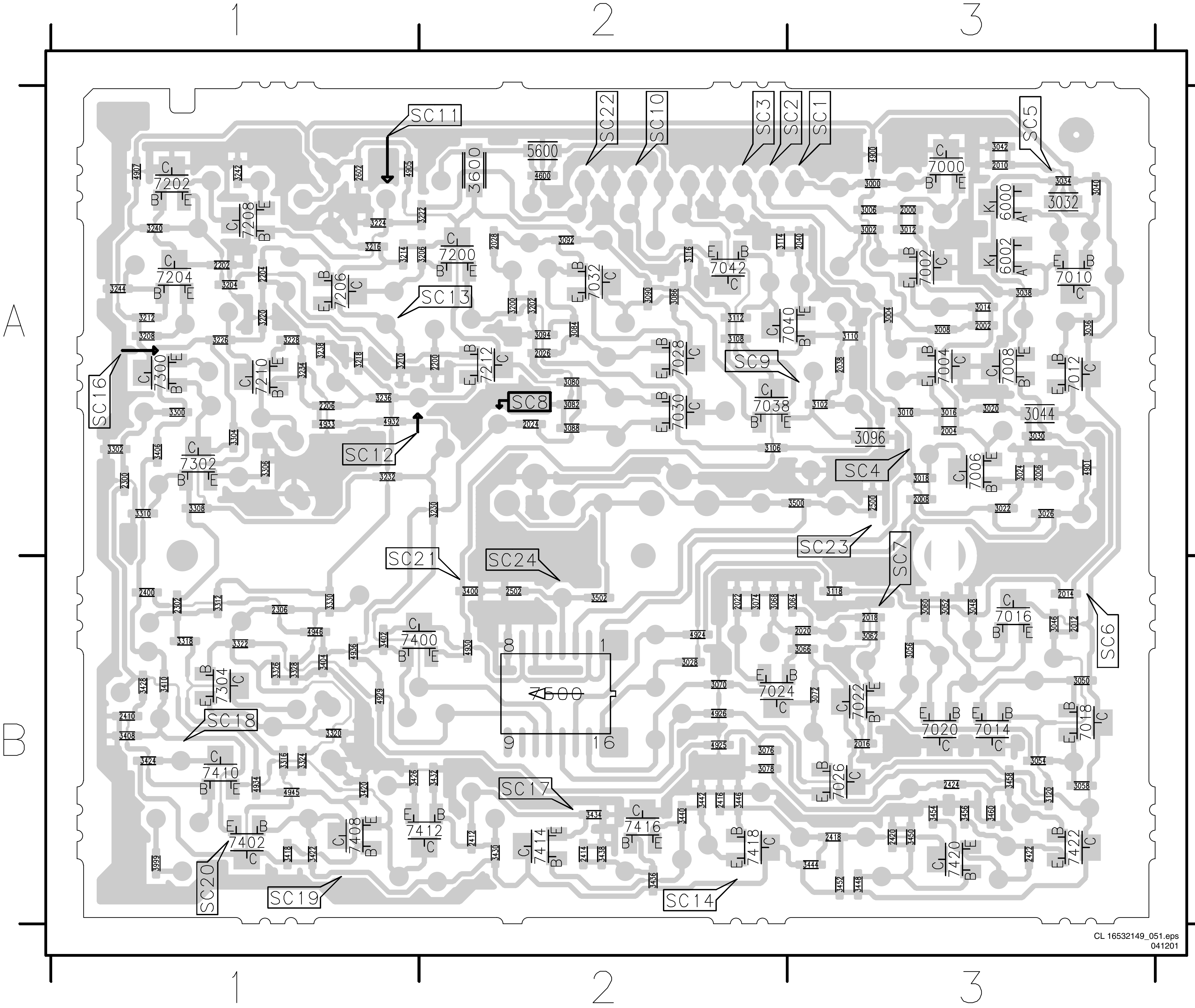

SC2
AUTO SCAVEM PCR
(PEAK CONTRAST REDUCTION)
LINE PARABOLA
PCR PROCESSING
(RES)
SC1
+12S
+12S
DAC2
PARAB
Y-DIFF
PCR
SC14
SC16
SC17
SC18
SC19
SC20
SC21
7300 BC847B
7302 BFS20
7304 BFS20
7400 BFS20
7402 BFS20
7408 BFS20
7410 BFS20
7412 BFS20
7414 BFS20
BF824 7416
7418 BFS20
7420 BFS20
7422 BFS20
3300 1K5
3302 270R
3304 6K8
3306 680R
3308 470K
3310 47K
3312 18K
3316 1K5
3318 15K
3320 100R
3322 10K
3324 12K
3326 680R
3328 22R
3330 2K2
2300 1u
2302 1u
2304 100u
2306 1u
3400 1K
3402 47K
3404 4K7
3406 1K
3408 2K2
3410 1K5
3418 39K
3420 22K
3422 2K2
3424 2K2
3426 1K
3428 1K
3430 47K
3432 6K8
3434 2K2
3436 22K
3438 10K
3440 100R
3442 1K
3444 47K
3446 47K
3448 47K
3450 6K8
3452 3K3
3454 560R
3456 1K
3458 47K
3460 47K
2400 22n
2410 1u
2412 22n
2414 100n
2416 15p
2418 22n
2420 100n
2422 47p
2424 22n
1 2 3 4 5 6 7 8 9 10
A B C D E
CL 16532149_027.eps
131201

Layout Auto SCAVEM (Top View)


1
2
3
A
B
1382
1
9
2600
2208
2
3
1
0361
0360
2304
CL 16532149_050.eps
041201

0360	A2
0361	A2
1382	A2
2208	A3
2304	B3
2600	A3

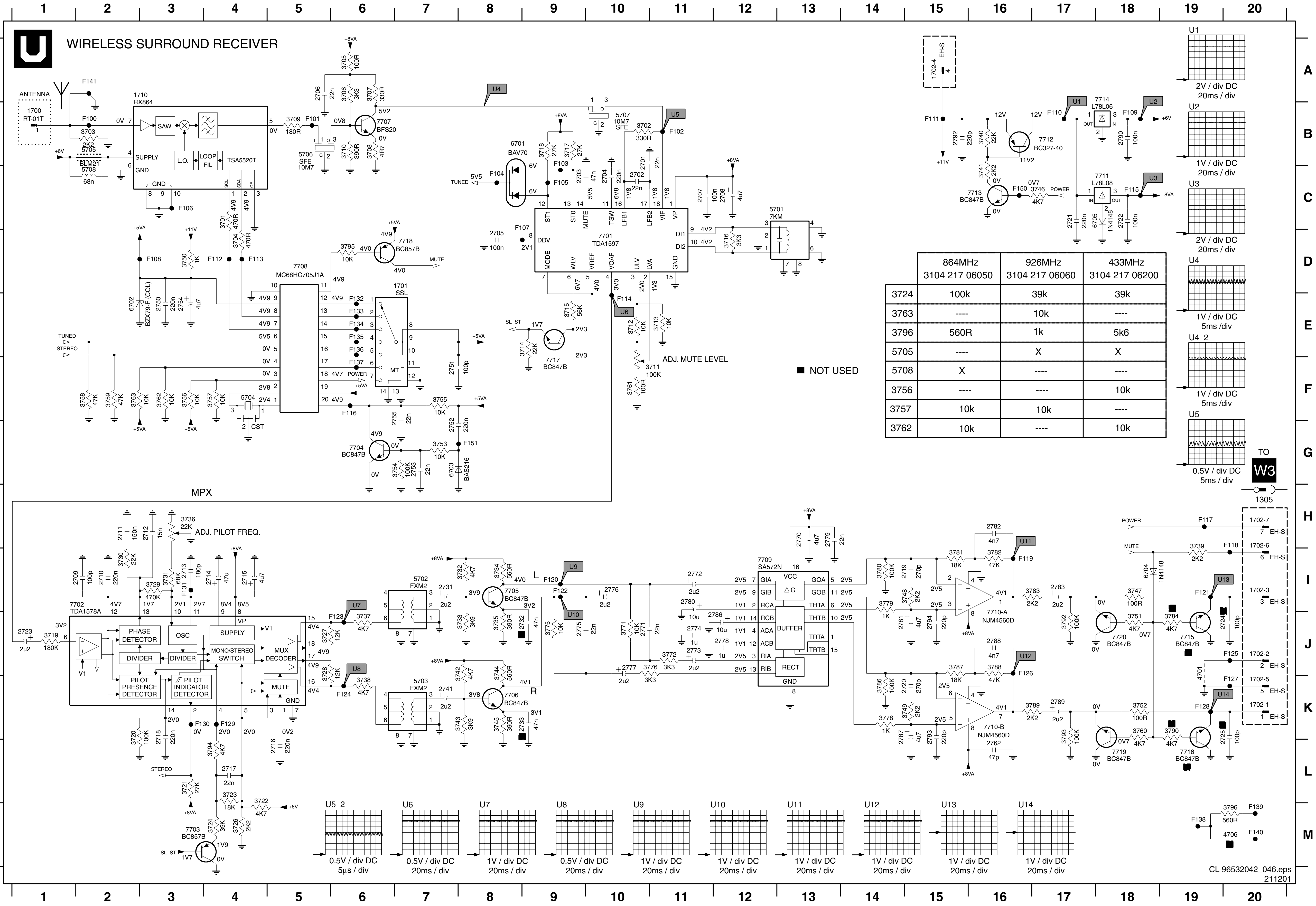
Layout Auto SCAVEM (Bottom View)


1
2
3
A
B
SC1
SC2
SC3
SC4
SC5
SC6
SC7
SC8
SC9
SC10
SC11
SC12
SC13
SC14
SC16
SC17
SC18
SC19
SC20
SC21
SC22
SC23
SC24
7500
8
1
9
16
7000
7002
7004
7006
7008
7010
7012
7014
7016
7018
7020
7022
7024
7026
7028
7030
7032
7038
7040
7042
7200
7202
7204
7206
7208
7210
7212
7300
7302
7304
7400
7402
7408
7410
7412
7414
7416
7418
7420
7422
6000
6002
5600
3600
3032
3044
3096

CL 16532149_051.eps
041201

2000	A3	3078	B2	3442	B2
2002	A3	3080	A2	3444	B3
2004	A3	3082	A2	3446	B2
2006	A3	3084	A2	3448	B3
2008	A3	3086	A2	3450	B3
2010	A3	3088	A2	3452	B3
2012	B3	3090	A2	3454	B3
2014	B3	3092	A2	3456	B3
2016	B3	3094	A2	3458	B3
2018	B3	3096	A3	3460	B3
2020	B3	3102	A3	3500	A3
2022	B2	3106	A2	3502	B2
2024	A2	3108	A2	3600	A2
2026	A2	3110	A3	3999	B1
2028	A2	3112	A2	4600	A2
2038	A3	3114	A2	4900	A3
2040	A3	3116	A2	4901	A3
2200	A2	3118	B3	4905	A1
2202	A1	3120	B3	4907	A1
2204	A1	3200	A2	4924	B2
2206	A1	3202	A2	4925	B2
2300	A1	3204	A1	4926	B2
2302	B1	3206	A2	4929	B1
2306	B1	3208	A1	4930	B2
2400	B1	3210	A1	4932	A1
2410	B1	3212	A1	4933	A1
2412	B2	3214	A1	4934	B1
2414	B2	3216	A1	4936	B1
2416	B2	3218	A1	4945	B1
2418	B3	3220	A1	4946	B1
2420	B3	3222	A2	5600	A2
2422	B3	3224	A1	6000	A3
2424	B3	3226	A1	6002	A3
2500	A3	3228	A1	7000	A3
2502	B2	3230	A2	7002	A3
2602	A1	3232	A1	7004	A3
3000	A3	3234	A1	7006	A3
3002	A3	3236	A1	7008	A3
3004	A3	3238	A1	7010	A3
3006	A3	3240	A1	7012	A3
3008	A3	3242	A1	7014	B3
3010	A3	3244	A1	7016	B3
3012	A3	3300	A1	7018	B3
3014	A3	3302	A1	7020	B3
3016	A3	3304	A1	7022	B3
3018	A3	3306	A1	7024	B2
3020	A3	3308	A1	7026	B3
3022	A3	3310	A1	7028	A2
3024	A3	3312	B1	7030	A2
3026	A3	3316	B1	7032	A2
3028	B2	3318	B1	7038	A2
3030	A3	3320	B1	7040	A3
3032	A3	3322	B1	7042	A2
3034	A3	3324	B1	7200	A2
3036	A3	3326	B1	7202	A1
3038	A3	3328	B1	7204	A1
3040	A3	3330	B1	7206	A1
3042	A3	3400	B2	7208	A1
3044	A3	3402	B1	7210	A1
3046	B3	3404	B1	7212	A2
3048	B3	3406	A1	7300	A1
3050	B3	3408	B1	7302	A1
3052	B3	3410	B1	7304	B1
3054	B3	3418	B1	7400	B1
3056	B3	3420	B1	7402	B1
3058	B3	3422	B1	7408	B1
3060	B3	3424	B1	7410	B1
3062	B3	3426	B1	7412	B2
3064	B3	3428	B1	7414	B2
3066	B3	3430	B2	7416	B2
3068	B2	3432	B2	7418	B2
3070	B2	3434	B2	7420	B3
3072	B3	3436	B2	7422	B3
3074	B2	3438	B2	7500	B2
3076	B2	3440	B2		

Wireless Surround Receiver

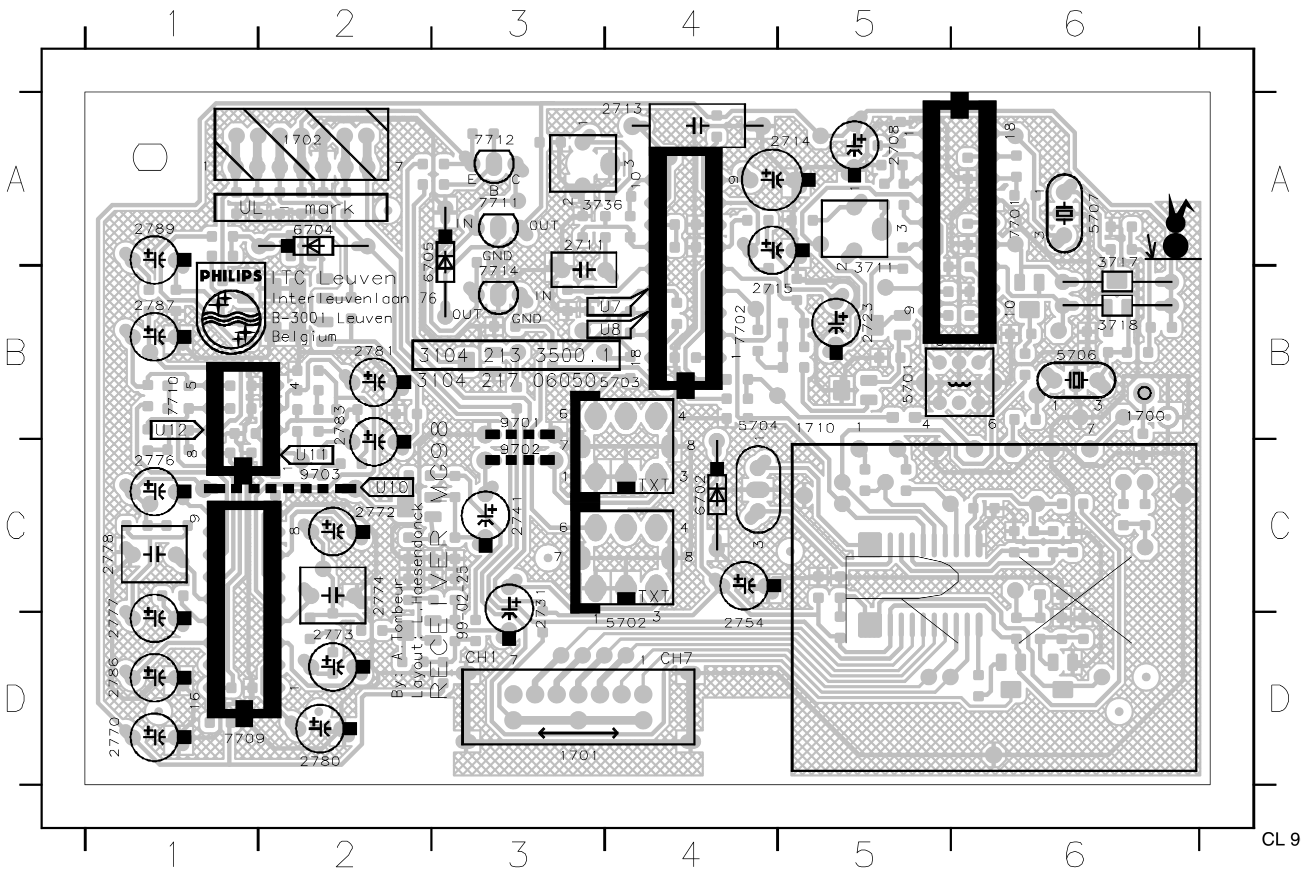

U
WIRELESS SURROUND RECEIVER
ANTENNA
1700
RT-01T
F141
1710
RX864
SAW
L.O.
LOOP FIL
TSA5520T
SUPPLY
GND
F100
3703
2K2
5705
BLM21
5708
68n
+6V
F106
3709
180R
F101
5706
SFE
10M7
7707
BFS20
3705
100R
3706
3K3
3707
330R
3708
4R7
3710
390R
2706
22n
U4
5707
10M7
SFE
3702
330R
U5
F102
6701
BAV70
F104
F103
F105
5V5
TUNED
3718
27K
3717
27K
2703
47n
2704
220n
2701
22n
2702
22n
7701
TDA1597
ST1
ST0
MUTE
TSW
LFB1
LFB2
VIF
VP
DDV
MODE
WLV
VREF
VOAF
ULV
LVA
GND
DI1
DI2
2705
100n
F107
2707
100n
2708
4u7
5701
7KM
3716
3K3
F114
U6
3712
10K
3713
10K
3715
56K
SL_ST
7717
BC847B
3714
22K
3711
100K
ADJ. MUTE LEVEL
3761
100R
7708
MC68HC705J1A
3701
470R
3704
470R
F112
F113
F108
3750
1K
6702
BZX79-F (COL)
2750
220n
2754
4u7
3795
10K
7718
BC857B
MUTE
1701
SSL
MT
POWER
F132
F133
F134
F135
F136
F137
TUNED
STEREO
3758
47K
3759
47K
3763
10K
3762
10K
3756
10K
3757
10K
5704
CST
F116
3755
10K
2755
22n
2751
100p
2752
220n
7704
BC847B
3753
10K
F151
3754
100K
2753
22n
6703
BAS216
MPX
NOT USED
1702-4
EH-S
F111
+11V
2792
220p
3740
22K
7712
BC327-40
12V
11V2
F110
U1
7714
L78L06
F109
U2
2790
100n
3741
2K2
7713
BC847B
F150
3746
4K7
7711
L78L08
U3
F115
2721
220n
6705
1N4148
2722
100n
U1
2V / div DC
20ms / div
U2
1V / div DC
20ms / div
U3
2V / div DC
20ms / div
U4
1V / div DC
5ms /div
U4_2
1V / div DC
5ms /div
U5
0.5V / div DC
5ms / div
TO
W3
1305
7702
TDA1578A
PHASE DETECTOR
OSC
SUPPLY
DIVIDER
MONO/STEREO SWITCH
MUX DECODER
PILOT PRESENCE DETECTOR
PILOT INDICATOR DETECTOR
MUTE
VP
V1
2723
2u2
3719
180K
2709
100p
2710
220n
2711
150n
2712
15n
3730
22K
3729
470K
3731
68K
2713
180p
3736
22K
ADJ. PILOT FREQ.
F131
2714
47u
2715
4u7
3720
100K
2718
220n
F130
F129
3794
4K7
2716
220n
2717
22n
STEREO
3721
27K
3723
18K
3722
4K7
3724
39K
3726
2K2
7703
BC857B
SL_ST
F123
U7
3727
12K
3737
4K7
3728
12K
U8
F124
3738
4K7
5702
FXM2
5703
FXM2
2731
2u2
2741
2u2
3732
4K7
3733
3K9
3734
560R
7705
BC847B
3735
390R
2732
47n
3742
4K7
3743
3K9
3744
560R
7706
BC847B
3745
390R
2733
47n
L
R
F120
U9
F122
U10
3775
10K
2775
22n
2776
2u2
3771
10K
2771
22n
2772
2u2
2780
10u
2786
10u
2774
1u
2778
1u
2773
2u2
3772
3K3
2777
2u2
3776
3K3
7709
SA572N
VCC
BUFFER
RECT
GIA
GIB
RCA
RCB
ACA
ACB
RIA
RIB
GOA
GOB
THTA
THTB
TRTA
TRTB
2770
4u7
2779
22n
3780
100K
2719
270p
3748
2K2
2781
4u7
2794
220p
3779
1K
3781
18K
2782
4n7
3782
47K
U11
F119
7710-A
NJM4560D
3783
2K2
2783
2u2
3786
100K
2720
270p
3749
2K2
2787
4u7
2793
220p
3778
1K
3787
18K
2788
4n7
3788
47K
U12
F126
7710-B
NJM4560D
2762
47p
3789
2K2
2789
2u2
3792
100K
7720
BC847B
3751
4K7
3747
100R
3784
4K7
7715
BC847B
2724
100p
F121
U13
3793
100K
7719
BC847B
3760
4K7
3752
100R
3790
4K7
7716
BC847B
2725
100p
F128
U14
POWER
F117
MUTE
3739
2K2
F118
6704
1N4148
4701
F125
F127
1702-7
1702-6
1702-3
1702-2
1702-5
1702-1
EH-S
F138
3796
560R
F139
4706
F140
U5_2
0.5V / div DC
5µs / div
U6
0.5V / div DC
20ms / div
U7
1V / div DC
20ms / div
U8
0.5V / div DC
20ms / div
U9
1V / div DC
20ms / div
U10
1V / div DC
20ms / div
U11
1V / div DC
20ms / div
U12
1V / div DC
20ms / div
U13
1V / div DC
20ms / div
U14
1V / div DC
20ms / div
CL 96532042_046.eps
211201

■ NOT USED

	864MHz 3104 217 06050	926MHz 3104 217 06060	433MHz 3104 217 06200
3724	100k	39k	39k
3763	----	10k	----
3796	560R	1k	5k6
5705	----	X	X
5708	X	----	----
3756	----	----	10k
3757	10k	10k	----
3762	10k	----	10k

1700	B1
1701	D7
1702-1	K20
1702-2	J20
1702-3	I20
1702-4	A15
1702-5	K20
1702-6	H20
1702-7	H20
1710	A2
2701	C10
2702	C10
2703	C9
2704	C10
2705	D8
2706	A5
2707	C11
2708	C12
2709	I2
2710	I2
2711	H2
2712	H3
2713	I3
2714	I4
2715	I4
2716	K5
2717	L4
2718	K3
2719	I15
2720	K15
2721	C17
2722	C18
2723	J1
2724	J20
2725	K20
2731	I7
2732	J9
2733	K9
2741	K7
2750	E3
2751	F7
2752	G7
2753	G7
2754	E3
2755	F7
2762	L16
2770	H13
2771	J10
2772	I11
2773	J11
2774	J11
2775	J9
2776	I10
2777	J10
2778	J12
2779	H13
2780	I11
2781	J14
2782	H16
2783	I17
2786	J12
2787	K14
2788	J16
2789	K17
2790	B18
2792	B15
2793	K15
2794	J15
3701	C4
3702	B10
3703	B2
3704	C4
3705	A6
3706	A6
3707	A6
3708	B6
3709	B5
3710	B6
3711	E11
3712	E10
3713	E11
3714	E9
3715	E9
3716	D12
3717	B9
3718	B9
3719	J1
3720	K2
3721	L3
3722	M4
3723	L4
3724	M4
3726	M4
3727	J5
3728	J5
3729	I3
3730	I2
3731	I3
3732	I8
3733	J8
3734	I8
3735	J8
3736	H3
3737	J6
3738	K6
3739	I19
3740	B16
3741	C16
3742	J8
3743	K8
3744	J8
3745	K8
3746	C17
3747	I18
3748	I15
3749	K15
3750	D3
3751	J18
3752	K18
3753	G7
3754	G7
3755	F7
3756	F3
3757	F4
3758	F2
3759	F2
3760	K18
3761	F10
3762	F3
3763	F2
3771	J10
3772	J11
3775	J9
3776	J10
3778	K14
3779	I14
3780	I14
3781	I15
3782	I16
3783	I17
3784	J19
3786	K14
3787	J15
3788	J16
3789	K17
3790	K19
3792	J17
3793	K17
3794	L4
3795	D6
3796	M20
4701	J19
4706	M20
5701	C12
5702	I7
5703	K7
5704	F4
5705	B2
5706	B5
5707	B10
5708	C2
6701	B8
6702	E2
6703	G7
6704	I18
6705	C18
7701	D10
7702	I1
7703	M3
7704	G6
7705	I8
7706	K8
7707	B6
7708	F5
7709	I12
7710-A	I16
7710-B	K16
7711	C18
7712	B17
7713	C16
7714	A18
7715	J19
7716	L19
7717	F9
7718	D7
7719	L18
7720	J18
F100	B2
F101	B5
F102	B11
F103	B9
F104	C8
F105	C9
F106	C3
F107	D9
F108	D3
F109	B18
F110	B17
F111	B15
F112	D4
F113	D4
F114	D10
F115	C18
F116	F6
F117	H19
F118	H20
F119	I16
F120	I9
F121	I20
F122	I9
F123	J6
F124	K6
F125	J20
F126	J16
F127	K20
F128	K20
F129	K4
F130	K4
F131	I3
F132	E6
F133	E6
F134	E6
F135	E6
F136	E6
F137	F6
F138	M19
F139	M20
F140	M20
F141	A2
F150	C16
F151	G8

Layout Wreless Surround Receiver (Top View)


1
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6
A
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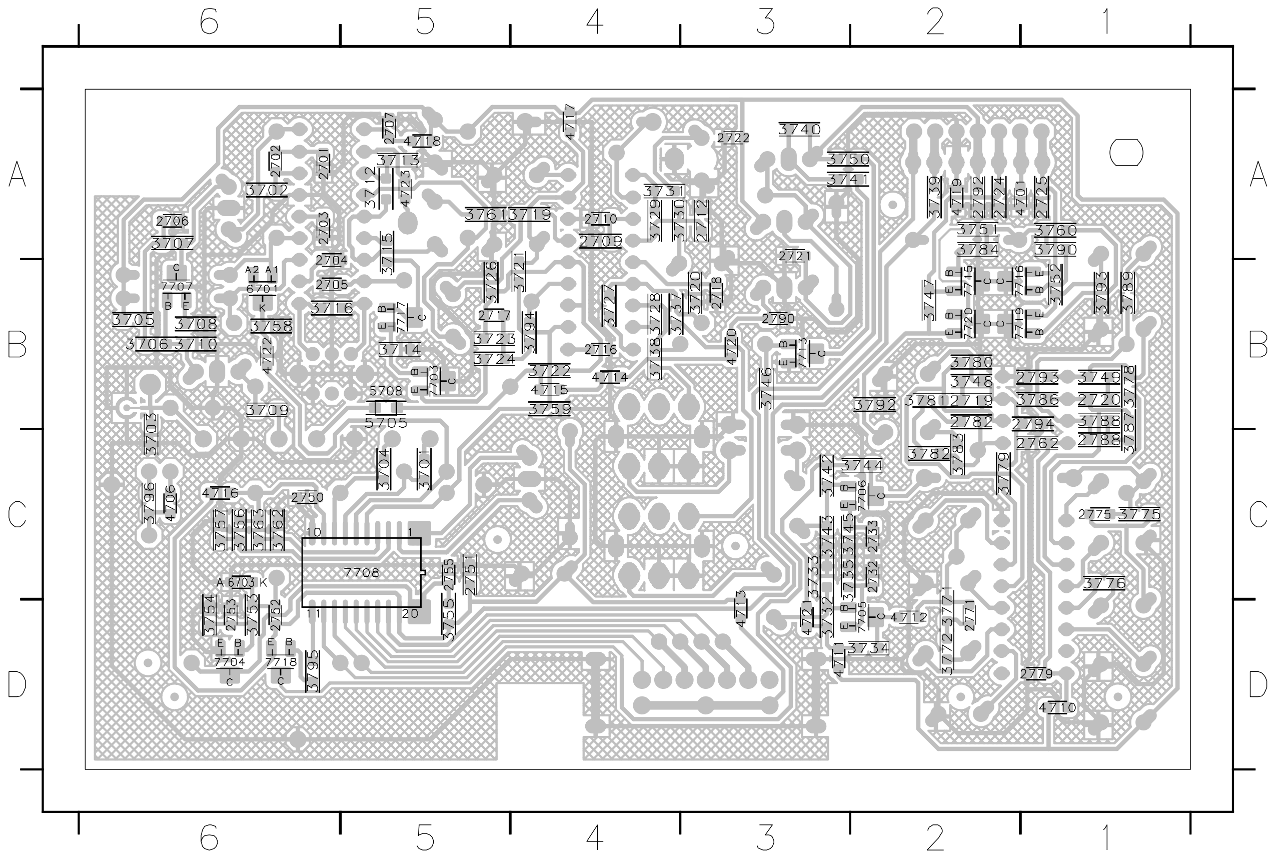
C
D
1702
UL mark
6704
6705
PHILIPS
ITC Leuven
Interleuvenlaan 76
B-3001 Leuven
Belgium
3104 213 3500.1
3104 217 06050
RECEIVER MG98
Layout: L.Hoesendonck
By: A. Tonbeur
99-02-25
2713
2714
2708
2711
2715
2723
3736
3711
3717
3718
5701
5703
5704
5706
5707
5702
1700
1701
1710
7701
7702
7709
7710
7711
7712
7714
9701
9702
9703
U7
U8
U10
U11
U12
TXT
CH1
CH7
2741
2731
2754
6702
2770
2772
2773
2774
2776
2777
2778
2780
2781
2783
2786
2787
2789
IN
OUT
GND

1700	B6
1701	D3
1702	A2
1710	B5
2708	A5
2711	A3
2713	A4
2714	A5
2715	B4
2723	B5
2731	C3
2741	C3
2754	D4
2770	D1
2772	C2
2773	D2
2774	C2
2776	C1
2777	D1
2778	C1
2780	D2
2781	B2
2783	C2
2786	D1
2787	B1
2789	A1
3711	B5
3717	A6
3718	B6
3736	A4
5701	B5
5702	D4
5703	B4
5704	B4
5706	B6
5707	A6
6702	C4
6704	A2
6705	A2
7701	A6
7702	B4
7709	D1
7710	B1
7711	A3
7712	A3
7714	B3
9701	C3
9702	C3
9703	C2

CL 96532042_051.eps
020699

Layout Wreless Surround Receiver (Bottom View)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3749
3778
3786
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3787
3792
3782
3775
3776
3744
3734
4710
4712
4716
4706
2750
5705
5708
3709
3703
3796
2779

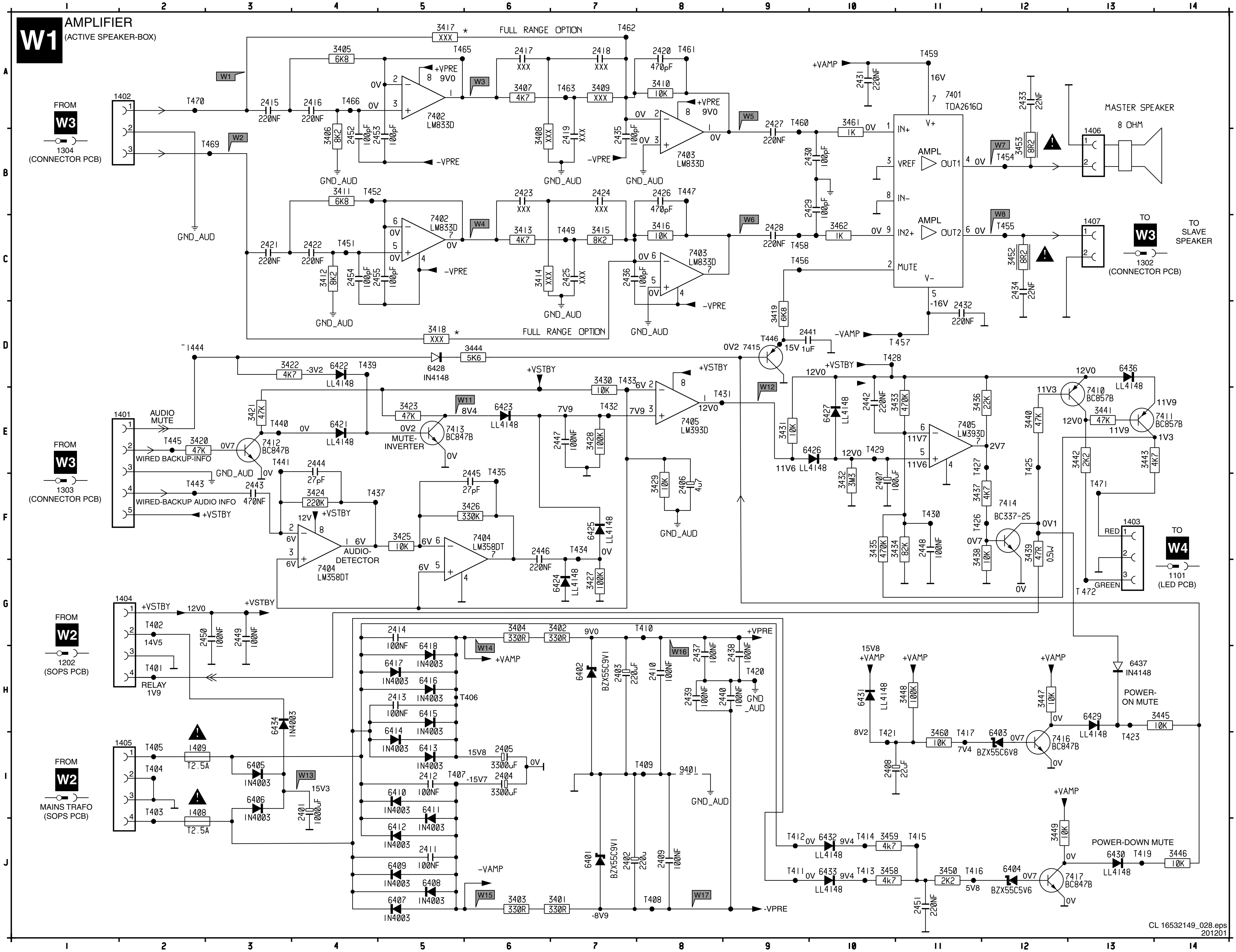
2701	A6
2702	A6
2703	A6
2704	A5
2705	B5
2706	A6
2707	A5
2709	A4
2710	A4
2712	A3
2716	B4
2717	B5
2718	B3
2719	B2
2720	B1
2721	A3
2722	A3
2724	A2
2725	A1
2732	C2
2733	C2
2750	C6
2751	C5
2752	D6
2753	C6
2755	C5
2762	C1
2771	D2
2775	C1
2779	D1
2782	C2
2788	C1
2790	B3
2792	A2
2793	B1
2794	B1
3701	C5
3702	A6
3703	C6
3704	C5
3705	B6
3706	B6
3707	A6
3708	B6
3709	B6
3710	B6
3712	A5
3713	A5
3714	B5
3715	B5
3716	B6
3719	A4
3720	B4
3721	B4
3722	B4
3723	B5
3724	B5
3726	B5
3727	B4
3728	B4
3729	A4
3730	A3
3731	A4
3732	D3
3733	C3
3734	D2
3735	C3
3737	B3
3738	B4
3739	A2
3740	A3
3741	A2
3742	C3
3743	C3
3744	C2
3745	C3
3746	B3
3747	B2
3748	B2
3749	B1
3750	A3
3751	A2
3752	B1
3753	C6
3754	D6
3755	D5
3756	C6
3757	C6
3758	B6
3759	B4
3760	A1
3761	A5
3762	C6
3763	C6
3771	D2
3772	D2
3775	C1
3776	C1
3778	B1
3779	C1
3780	B2
3781	B2
3782	C2
3783	C2
3784	A2
3786	B2
3787	C1
3788	B1
3789	B1
3790	A1
3792	B3
3793	B1
3794	B4
3795	D6
3796	C6
4701	A2
4706	C6
4710	D1
4711	D3
4712	D2
4713	D3
4714	B4
4715	B4
4716	C6
4717	A4
4718	A5
4719	A2
4720	B3
4721	D3
4722	B6
4723	A5
5705	B5
5708	B5
6701	A6
6703	C6
7703	B5
7704	D6
7705	D2
7706	C2
7707	A6
7708	D5
7713	B3
7715	B2
7716	B2
7717	B5
7718	D6
7719	B1
7720	B2

CL 96532042_052.eps
191201

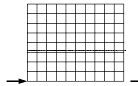
Personal Notes:

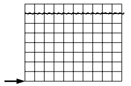
Personal Notes:

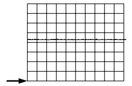
Active Speaker Box: Amplifier

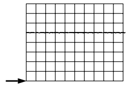

W1
AMPLIFIER
(ACTIVE SPEAKER-BOX)
FROM W3 1304 (CONNECTOR PCB)
FROM W3 1303 (CONNECTOR PCB)
FROM W2 1202 (SOPS PCB)
FROM W2 MAINS TRAFO (SOPS PCB)
TO W3 1302 (CONNECTOR PCB)
TO SLAVE SPEAKER
TO W4 1101 (LED PCB)
MASTER SPEAKER
8 OHM
FULL RANGE OPTION
7401 TDA2616Q
IN+
IN-
IN2+
VREF
MUTE
V+
V-
AMPL
OUT1
OUT2
7402 LM833D
7403 LM833D
7404 LM358DT
7405 LM393D
7412 BC847B
7413 BC847B
7414 BC337-25
7415
7410 BC857B
7411 BC857B
7416 BC847B
7417 BC847B
AUDIO MUTE
WIRED BACKUP-INFO
WIRED-BACKUP AUDIO INFO
MUTE-INVERTER
AUDIO-DETECTOR
RELAY 1V9
POWER-ON MUTE
POWER-DOWN MUTE
RED
GREEN
GND_AUD
+VPRE
-VPRE
+VAMP
-VAMP
+VSTBY
1409 T2.5A
1408 T2.5A
BZX55C9V1
BZX55C6V8
BZX55C5V6
IN4003
LL4148
IN4148
CL 16532149_028.eps
201201

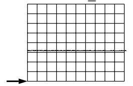
1401	E2	6410	I5
1402	A2	6411	I5
1403	F13	6412	I5
1404	G2	6413	I5
1405	I2	6414	J5
1406	B13	6415	H5
1407	C13	6416	H5
1408	J2	6417	H5
1409	I2	6418	H5
2401	I4	6421	E4
2402	J7	6422	D4
2403	H7	6423	E6
2404	I6	6424	G7
2405	I6	6425	F7
2406	F8	6426	E10
2407	F10	6427	E10
2408	I11	6429	H13
2409	J8	6430	J13
2410	H8	6431	H10
2411	J5	6432	J10
2412	I5	6433	J10
2413	H5	6434	H3
2414	G5	6436	D13
2415	A3	7401	A11
2416	A4	7402	A5
2417	A6	7403	C8
2418	A7	7404	F4
2419	B7	7405	E11
2420	A8	7410	E13
2421	C3	7411	E13
2422	C4	7412	E3
2423	B6	7413	E5
2424	B7	7414	F12
2425	C7	7415	D9
2426	B8	7416	I12
2427	B9	7417	J12
2428	C9	9401	I8
2429	C10	T401	H2
2430	B10	T402	G2
2431	A10	T403	J2
2432	D11	T404	I2
2433	A12	T405	I2
2434	C12	T406	H5
2435	B7	T407	I5
2436	C7	T408	J8
2437	H8	T409	I8
2438	H9	T410	G8
2439	H8	T411	J9
2440	H9	T412	J9
2441	D10	T413	J10
2442	E10	T414	J10
2443	F3	T415	J11
2444	E4	T416	J12
2445	F6	T417	I11
2446	F6	T419	J13
2447	E7	T420	H9
2448	F11	T421	I10
2449	G3	T423	H13
2450	G3	T425	E12
2451	J11	T426	F12
2452	B4	T427	E12
2453	B5	T428	D10
2454	C4	T429	E10
2455	C5	T430	F11
3401	J7	T431	E8
3402	G7	T432	E7
3403	G7	T433	D7
3404	G6	T434	F7
3405	A4	T435	F6
3406	B4	T437	F4
3407	A6	T439	D4
3408	B6	T440	E3
3409	A7	T441	E3
3410	A8	T443	F2
3411	B4	T444	D2
3412	C4	T445	E2
3413	C6	T446	D9
3414	C6	T447	B8
3415	C7	T449	C7
3416	C8	T451	C4
3417	A5	T452	B4
3418	D5	T454	B12
3420	E2	T455	C12
3421	E3	T456	C9
3422	D3	T457	D11
3423	E5	T458	C9
3424	F4	T459	A11
3425	F5	T460	B9
3426	F6	T461	A8
3427	G7	T462	A7
3428	E7	T463	A7
3429	F8	T465	A5
3430	D7	T466	A4
3431	E9	T469	B3
3432	F10	T470	A2
3433	E11	T471	F13
3434	F11	T472	G13
3435	F10		
3436	E12		
3437	F12		
3438	F12		
3439	F12		
3440	E12		
3441	E13		
3442	E13		
3443	E13		
3445	H14		
3446	J14		
3447	H12		
3448	H11		
3449	J12		
3450	J11		
3452	C12		
3453	B12		
3458	J11		
3459	J11		
3460	I11		
3461	B10		
6401	J7		
6402	H7		
6403	I12		
6404	J12		
6405	I3		
6406	I3		
6407	J5		
6408	J5		
6409	J5		

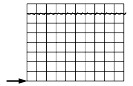
W1 1402 PIN1

5V / div DC
20ms / div

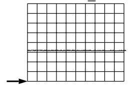
W15 3403

0.5V / div DC
20ms / div

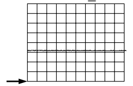
W2 1402 PIN3

0.1V / div DC
20ms / div

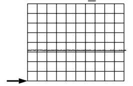
W16 2410

5V / div DC
20ms / div

W3 7402_PIN1

5V / div DC
20ms / div

W17 2409

1V / div DC
20ms / div

W4 7402_PIN7

5V / div DC
20ms / div

W5 7403_PIN1

5V / div DC
20ms / div

W6 7403_PIN7

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20ms / div

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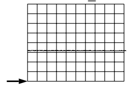
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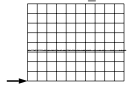
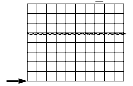
20ms / div

W8 7401_PIN6

5V / div DC
20ms / div

W11 7413_COIL

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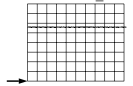
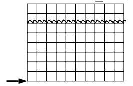
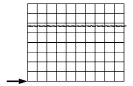
20ms / div

W12 7405_PIN1

5V / div DC
20ms / div

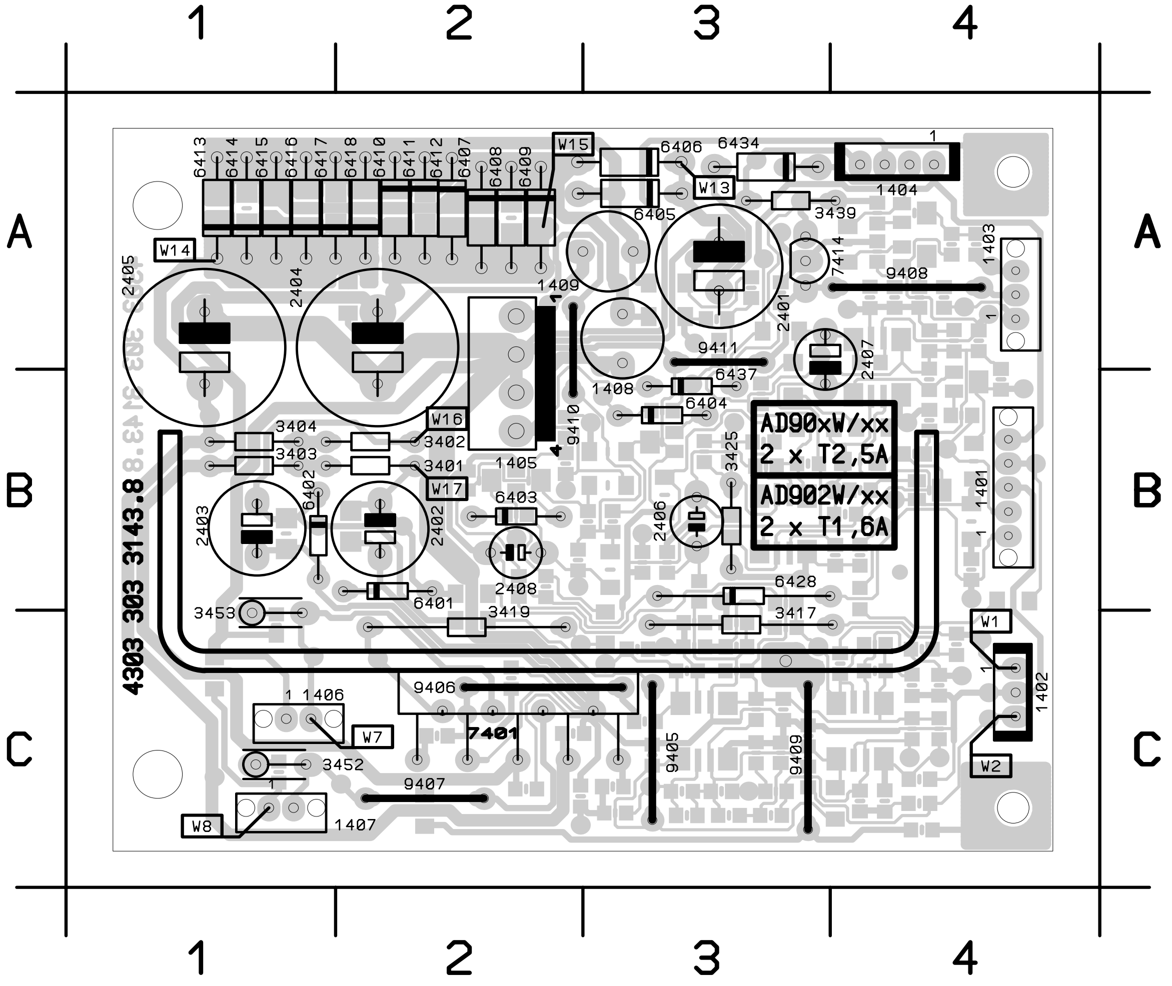
W13 2401_PLUS

5V / div DC
20ms / div

W14 3404

5V / div DC
20ms / div

Layout Speaker Box: Amplifier (W1)

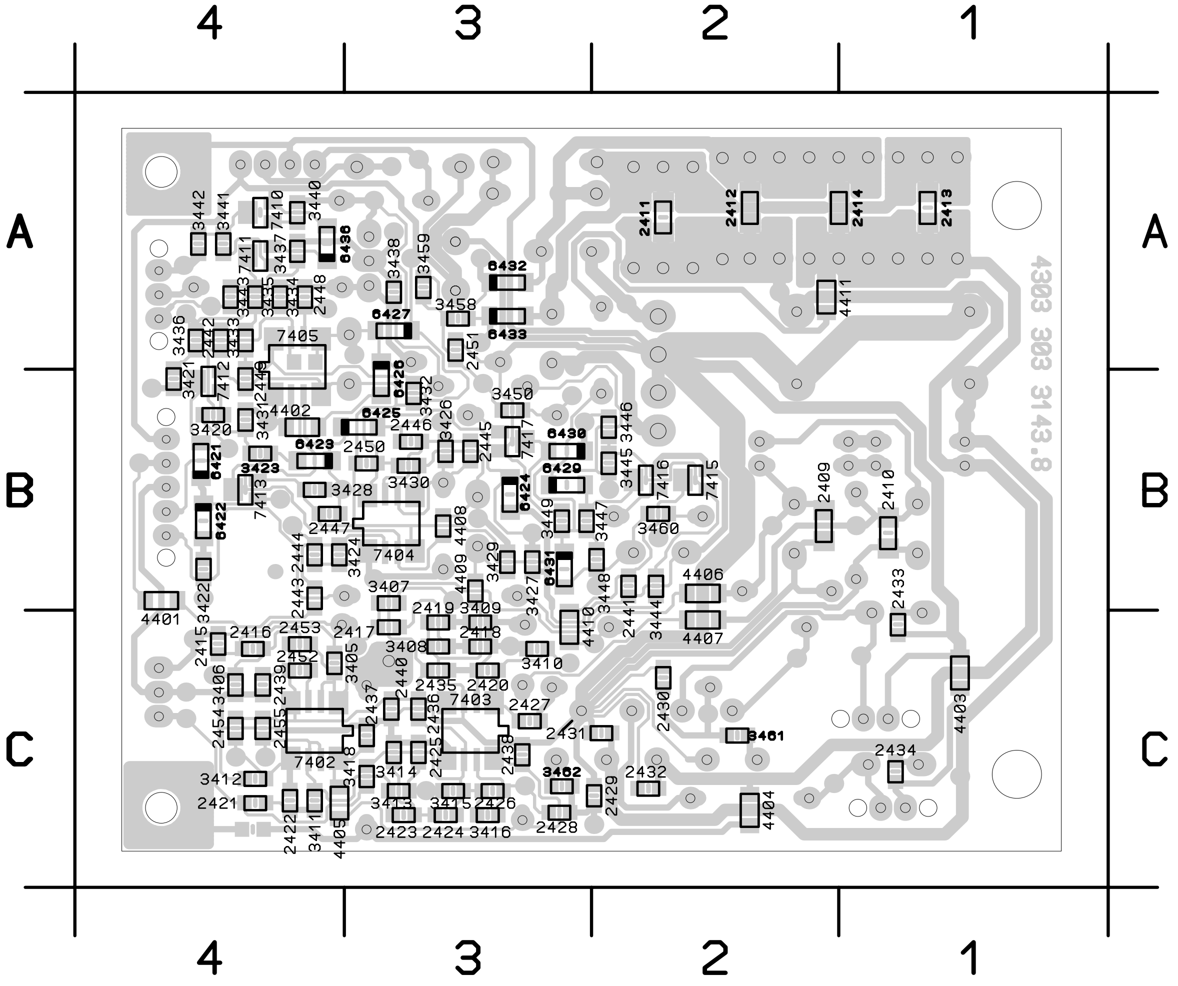
Top View

1401	B4	2401	A3	3402	B1	6401	B2	6410	A2	6428	B3	9409	C3
1402	C4	2402	B2	3403	B1	6402	B1	6411	A2	6434	A3	9410	B2
1403	A4	2403	B1	3404	B1	6403	B2	6412	A2	6437	B3	9411	A3
1404	A4	2404	B2	3417	C4	6404	B3	6413	A1	7401	C2		
1405	B2	2405	B1	3419	C2	6405	A2	6414	A1	7414	A3		
1406	C1	2406	B3	3425	B3	6406	A2	6415	A1	9405	C3		
1407	C1	2407	A3	3439	A3	6407	A2	6416	A1	9406	C2		
1408	A3	2408	B2	3452	C1	6408	A2	6417	A1	9407	C2		
1409	A2	3401	B1	3453	C1	6409	A2	6418	A2	9408	A4		


1
2
3
4
A
B
C
AD90xW/xx
2 x T2,5A
AD902W/xx
2 x T1,6A
4303 303 3143.8
W1
W2
W7
W8
W13
W14
W15
W16
W17
1401
1402
1403
1404
1405
1406
1407
1408
1409
7401
9405
9406
9407
9408
9409
9410
9411

Bottom View

2409	B2	2428	C3	2447	B4	3415	C3	3437	A4	4402	B4	6431	B3
2410	B1	2429	C2	2448	A4	3416	C3	3438	A3	4403	C1	6432	A3
2411	A2	2430	C2	2449	B4	3418	C3	3440	A4	4404	C2	6433	A3
2412	A2	2431	C2	2450	B3	3420	B4	3441	A4	4405	C4	6436	A4
2413	A1	2432	C2	2451	A3	3421	B4	3442	A4	4406	B2	7402	C4
2414	A1	2433	C1	2452	C4	3422	B4	3443	A4	4407	C2	7403	C3
2415	C4	2434	C1	2453	C4	3423	B4	3444	B2	4408	B3	7404	B3
2416	C4	2435	C3	2454	C4	3424	B4	3445	B2	4409	B3	7405	A4
2417	C3	2436	C3	2455	C4	3426	B3	3446	B2	4410	C3	7410	A4
2418	C3	2437	C3	3405	C4	3427	B3	3447	B3	4411	A2	7411	A4
2419	C3	2438	C3	3406	C4	3428	B4	3448	B2	6421	B4	7412	B4
2420	C3	2439	C4	3407	B3	3429	B3	3449	B3	6422	B4	7413	B4
2421	C4	2440	C3	3408	C3	3430	B3	3450	B3	6423	B4	7415	B2
2422	C4	2441	B2	3409	C3	3431	B4	3458	A3	6424	B3	7416	B2
2423	C3	2442	A4	3410	C3	3432	B3	3459	A3	6425	B3	7417	B3
2424	C3	2443	B4	3411	C4	3433	A4	3460	B2	6426	B3	9401	C3
2425	C3	2444	B4	3412	C4	3434	A4	3461	C2	6427	A3		
2426	C3	2445	B3	3413	C3	3435	A4	3462	C3	6429	B3		
2427	C3	2446	B3	3414	C3	3436	A4	4401	B4	6430	B3		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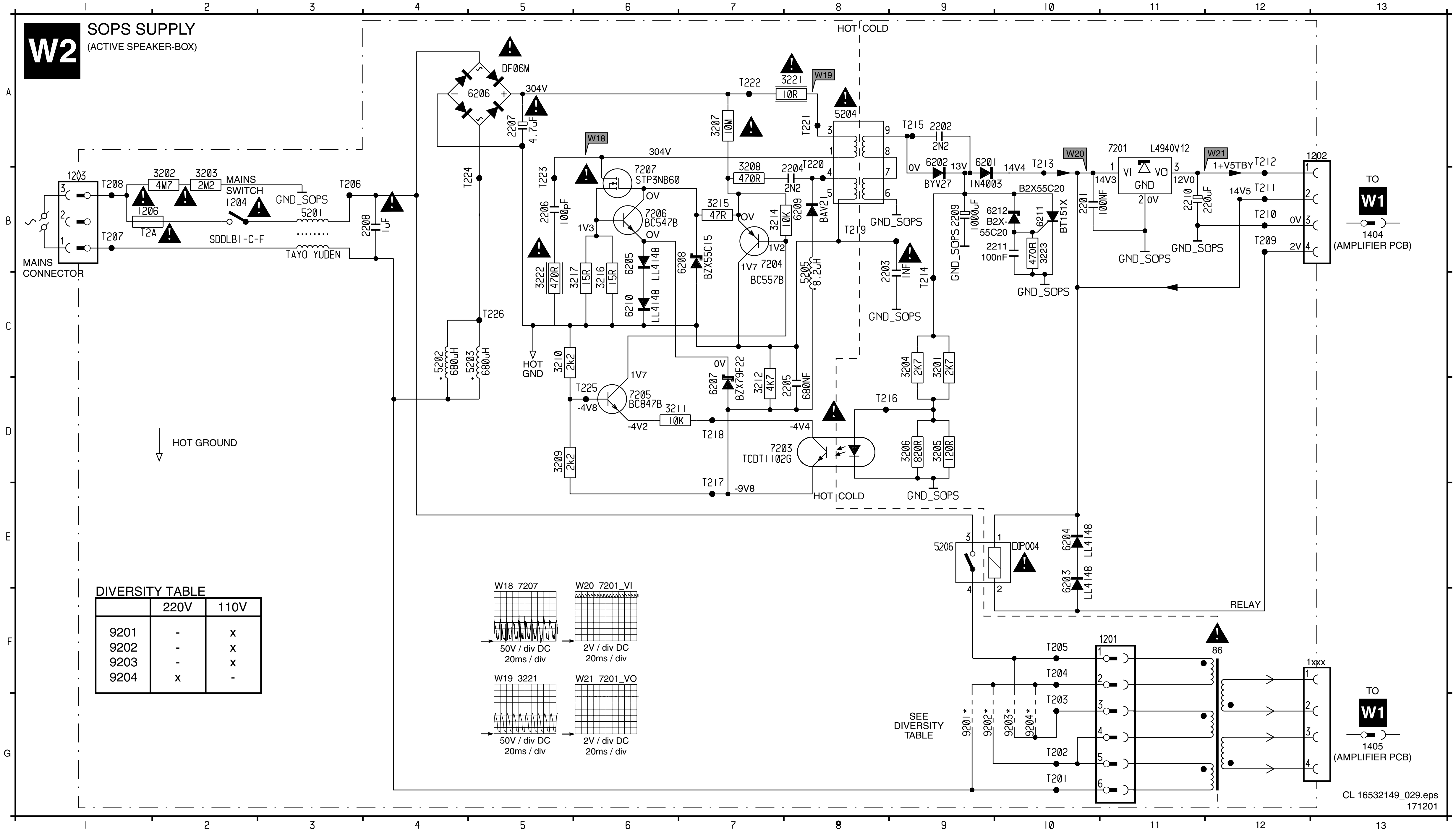
C
4303 303 3143.8
7402
7403
7404
7405
4401
4403
4404
4406
4407
4411

CL 16532149_055.eps
201201

Active Speaker Box: SOPS Supply

1201	F11
1202	B13
1203	A1
1204	B3
1206	B2
1209	B10
2201	B11
2202	A9
2203	B9
2204	B8
2205	D8
2206	B6
2207	A5
2208	B4
2209	B9
2210	B12
2211	C10
3201	C9
3202	B2
3203	B2
3204	C9
3205	D9
3206	D9
3207	A7
3208	B7
3209	D6
3210	C6
3211	D7
3212	D8
3214	B8
3215	B7
3216	C6
3217	C6
3219	B5
3220	B5
3221	A8
3222	C6
3223	B10
0086	F12
5201	B3
5202	C5
5203	C5
5204	A8
5205	B8
5206	E10
6201	A10
6202	A9
6203	E11
6204	E11
6205	B6
6206	A5
6207	D7
6208	B7
6209	B8
6210	C6
6211	B10
6212	B10
7201	A11
7203	D8
7204	B8
7205	D6
7206	B6
7207	B6
9201	G10
9202	G10
9203	G10
9204	G10
T201	G10
T202	G10
T203	G10
T204	F10
T205	F10
T206	A4
T207	A1
T208	A1
T209	B12
T210	B12
T211	B12
T212	B12
T213	B10
T214	C9
T215	A9
T216	D9
T217	E7
T218	T218
T219	B8
T220	B8
T221	A8
T222	A7
T223	B6
T224	B5
T225	D6
T226	C5


W2
SOPS SUPPLY
(ACTIVE SPEAKER-BOX)
HOT COLD
MAINS CONNECTOR
1203
T208
T207
3202 4M7
3203 2M2
MAINS SWITCH
1204
T206 T2A
SDDLBI-C-F
GND_SOPS
5201
TAYO YUDEN
T206
2208 1uF
DF06M
6206
304V
2207 4.7uF
T224
T223
W18
304V
7207 STP3NB60
0V
7206 BC547B
0V
1V3
2206 100pF
3222 470R
3217 15R
3216 15R
6205 LL4148
6210 LL4148
6208 BZX55C15
3215 47R
0V
7204 BC557B
1V7
1V2
3214 10K
6209 BAV21
5205 8.2uH
T222
3221 10R
W19
3207 10M
T221
5204
3208 470R
2204 2N2
T220
T219
GND_SOPS
2203 1NF
T214
GND_SOPS
T215
2202 2N2
0V
6202 BYV27
13V
6201 1N4003
14V4
T213
2209 1000uF
GND_SOPS
6212 B2X-55C20
2211 100nF
3223 470R
6211 BT151X
B2X55C20
GND_SOPS
W20
7201 L4940V12
VI VO GND
14V3
2201 100NF
12V0
2210 220uF
0V
W21
+V5TBY
T212
14V5
T211
T210
0V
T209
2V
GND_SOPS
1202
TO W1
1404 (AMPLIFIER PCB)
T226
5202 680uH
5203 680uH
HOT GND
3210 2k2
T225
-4V8
7205 BC847B
1V7
-4V2
3211 10K
T218
0V
6207 BZX79F22
3212 4K7
2205 680NF
-4V4
7203 TCDT1102G
3209 2k2
T217
-9V8
HOT COLD
T216
3204 2K7
3201 2K7
3206 820R
3205 120R
GND_SOPS
HOT GROUND
5206
DIP004
6204 LL4148
6203 LL4148
RELAY
W18 7207
50V / div DC
20ms / div
W20 7201_VI
2V / div DC
20ms / div
W19 3221
50V / div DC
20ms / div
W21 7201_VO
2V / div DC
20ms / div
1201
86
T205
T204
T203
T202
T201
SEE DIVERSITY TABLE
9201*
9202*
9203*
9204*
1xxx
TO W1
1405 (AMPLIFIER PCB)
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171201

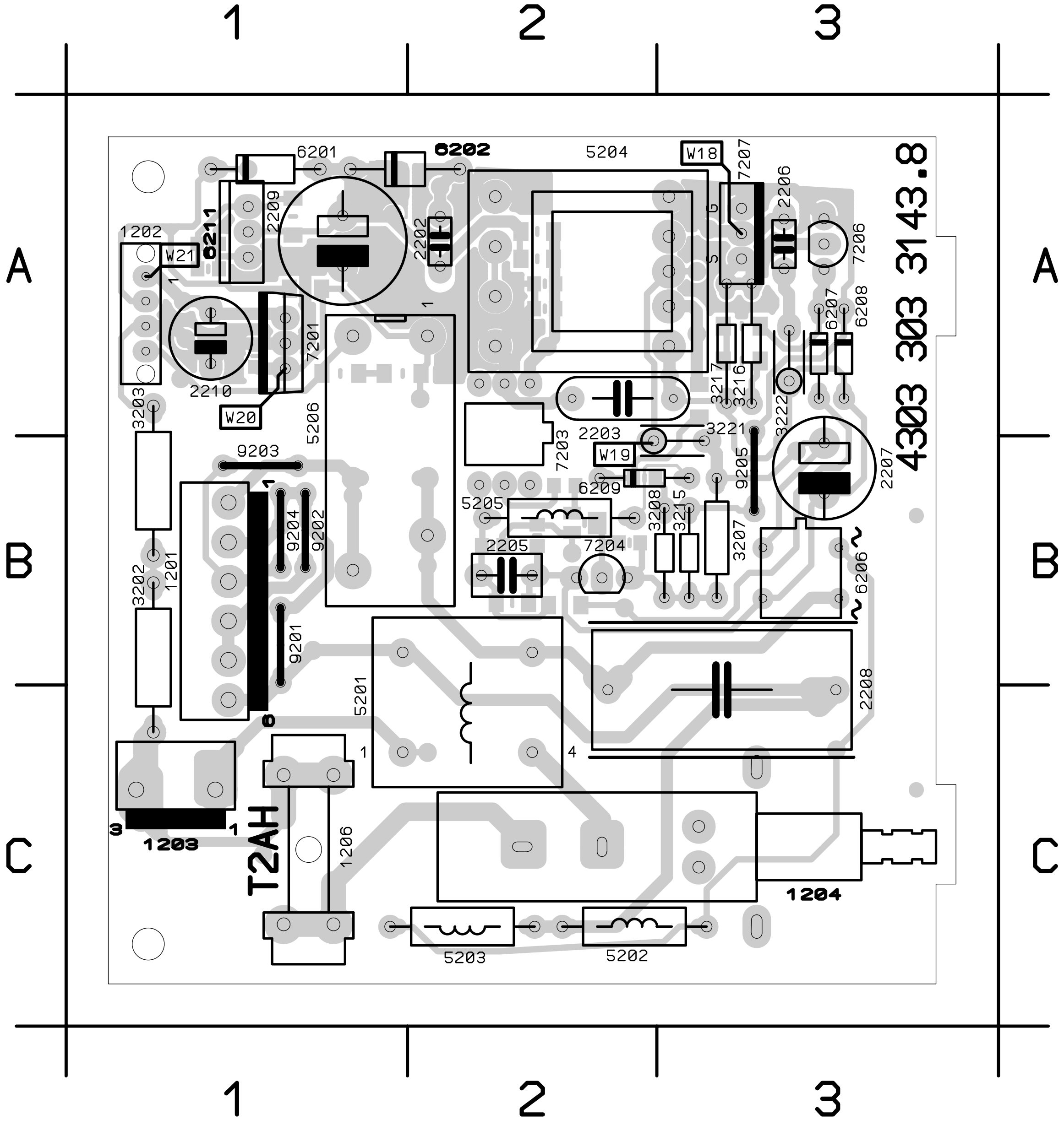
DIVERSITY TABLE

	220V	110V
9201	-	x
9202	-	x
9203	-	x
9204	x	-

Layout Speaker Box: SOPS Supply (W2)

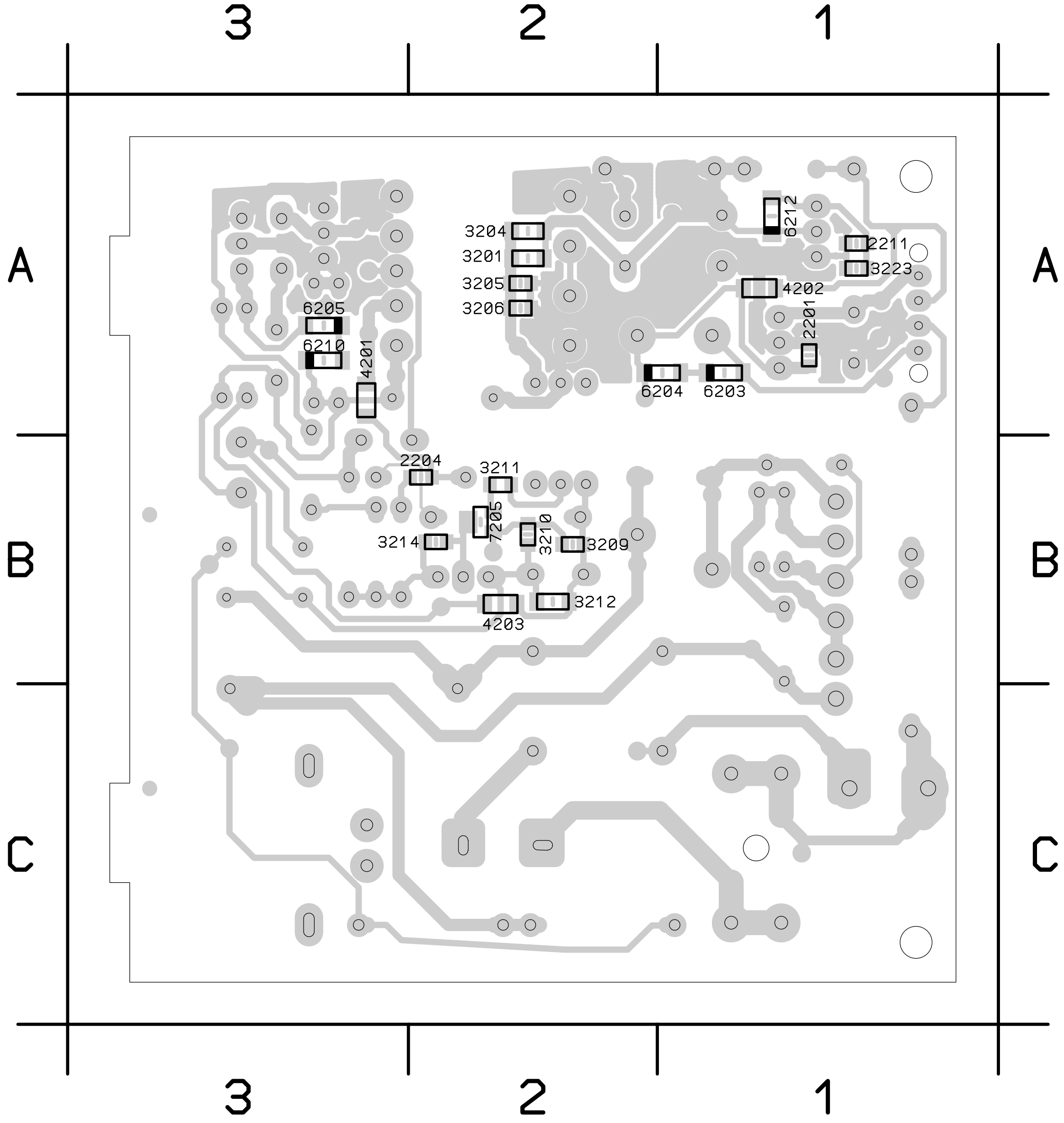
Top View

1201	B1	2208	C3	3219	C3	6201	A1	7206	A3
1202	A1	2209	A1	3220	B3	6202	A2	7207	A3
1203	C1	2210	A1	3221	B2	6206	B3	9201	C1
1204	C2	3202	C1	3222	A3	6207	A3	9202	B1
1206	C1	3203	B1	5201	C2	6208	A3	9203	B1
2202	A2	3207	B3	5202	C3	6209	B3	9204	B1
2203	A2	3208	B3	5203	C3	6211	A1	9205	B3
2205	B2	3215	B3	5204	A2	7201	A1		
2206	A3	3216	A3	5205	B2	7203	A2		
2207	B3	3217	A3	5206	B1	7204	B2		


1
2
3
A
B
C
6201
6202
5204
W18
7207
2206
7206
4303 303 3143.8
1202
W21
6211
2209
2202
7201
2210
W20
3203
9203
5206
3217
3216
6207
6208
3222
2203
3221
W19
7203
6209
9205
2207
5205
3208
3215
3207
2205
7204
6206
9204
9202
3202
1201
9201
5201
2208
1203
T2AH
1206
1204
5203
5202

Bottom View

2201	A1	3205	A2	3212	B2	4203	B2	6212	A1
2204	B2	3206	A2	3214	B2	6203	A1	7205	B2
2211	A1	3209	B2	3223	A1	6204	A1		
3201	A2	3210	B2	4201	A3	6205	A3		
3204	A2	3211	B2	4202	A1	6210	A3		


3
2
1
A
B
C
3204
3201
3205
3206
6212
2211
3223
4202
6205
6210
4201
2201
6204
6203
2204
3211
7205
3210
3209
3214
3212
4203

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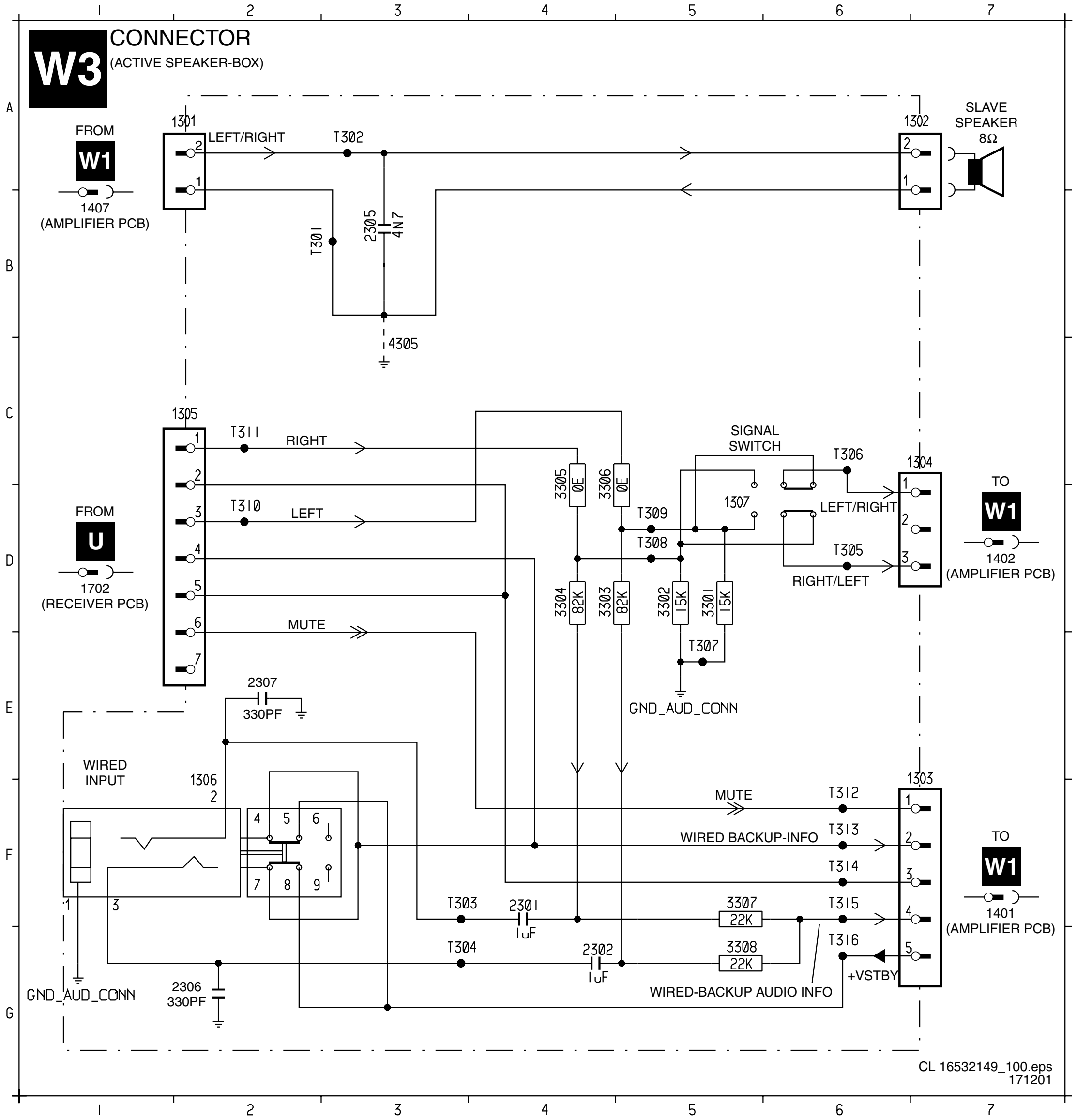
201201

Active Speaker Box: Connector

1301	A 7	1305	D2	2302	G4	3302	D5	3306	C5	T302	A3	T306	T310	D2	T314	F6
1302	A2	1306	F2	2303	B3	3303	D4	3307	F5	T303	F3	T307	T311	C2	T315	F6
1303	F7	1307	D5	2304	B3	3304	D4	3308	G5	T304	G3	T308	T312	F6	T316	G6
1304	D7	2301	F4	3301	D5	3305	C4	T301	B3	T305	D6	T309	T313	F6		



W3
CONNECTOR
(ACTIVE SPEAKER-BOX)
FROM
W1
1407
(AMPLIFIER PCB)
1301
LEFT/RIGHT
T302
T301
2305
4N7
4305
1302
SLAVE
SPEAKER
8Ω
1305
T311
RIGHT
T310
LEFT
MUTE
FROM
U
1702
(RECEIVER PCB)
3305 0E
3306 0E
3304 82K
3303 82K
3302 15K
3301 15K
T309
T308
T307
SIGNAL
SWITCH
1307
T306
LEFT/RIGHT
T305
RIGHT/LEFT
1304
TO
W1
1402
(AMPLIFIER PCB)
GND_AUD_CONN
2307
330PF
WIRED
INPUT
1306
MUTE
T312
WIRED BACKUP-INFO
T313
T314
T303
2301
1uF
3307
22K
T315
T304
2302
1uF
3308
22K
T316
+VSTBY
WIRED-BACKUP AUDIO INFO
1303
TO
W1
1401
(AMPLIFIER PCB)
2306
330PF
GND_AUD_CONN
A B C D E F G
1 2 3 4 5 6 7

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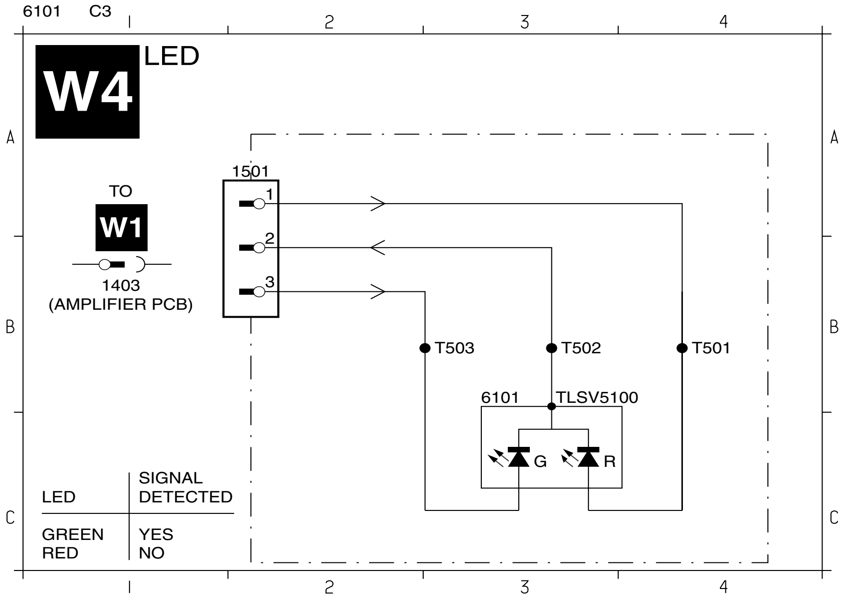
171201

Active Speaker Box: LED

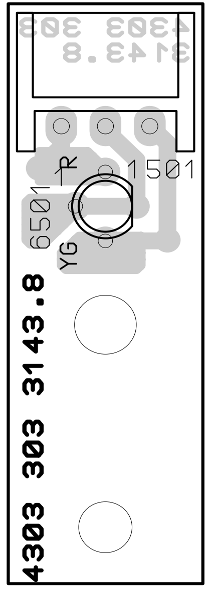
1501	A2
6101	C3



W4
LED
TO
W1
1403
(AMPLIFIER PCB)
1501
T503
T502
T501
6101
TLSV5100
G
R
A B C
1 2 3 4

LED	SIGNAL DETECTED
GREEN	YES
RED	NO

Layout Led Panel (Top View)



4303 303 3143.8
1501
6501
R
YG

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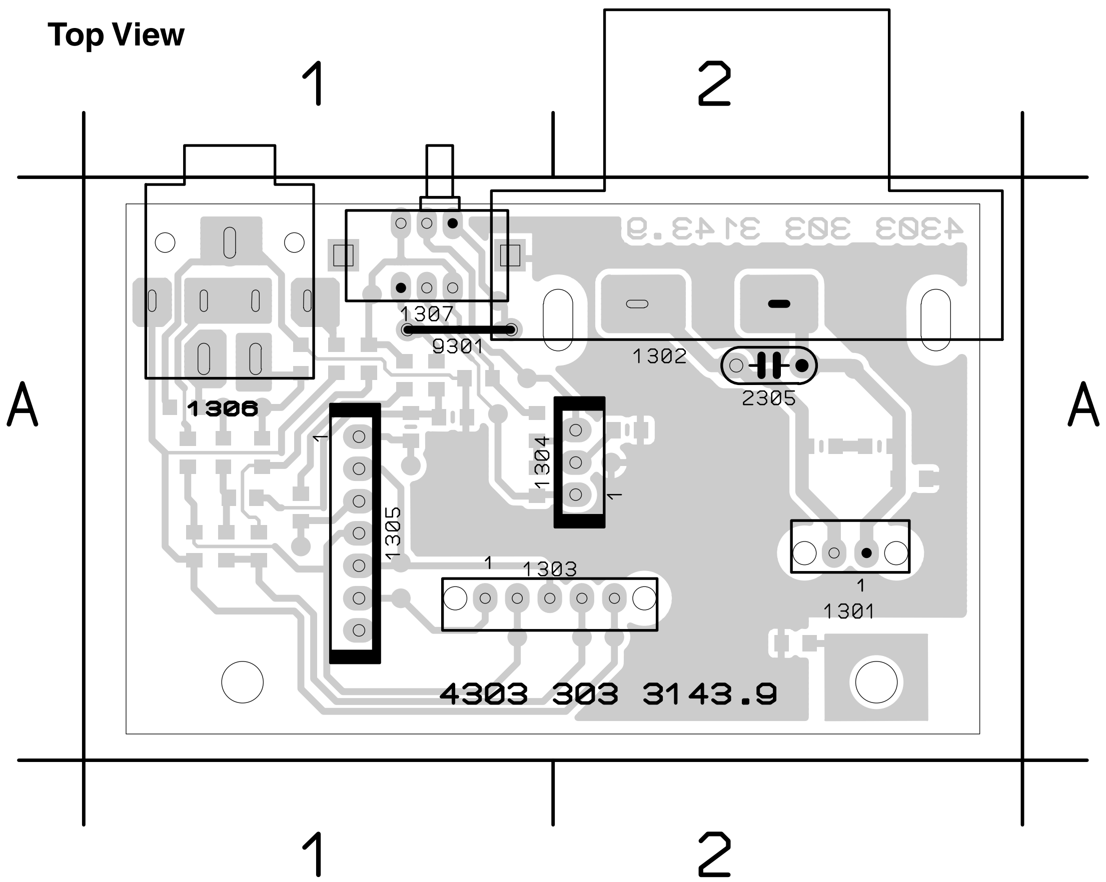
201201

Layout Active Speaker Box: Connector (W3)

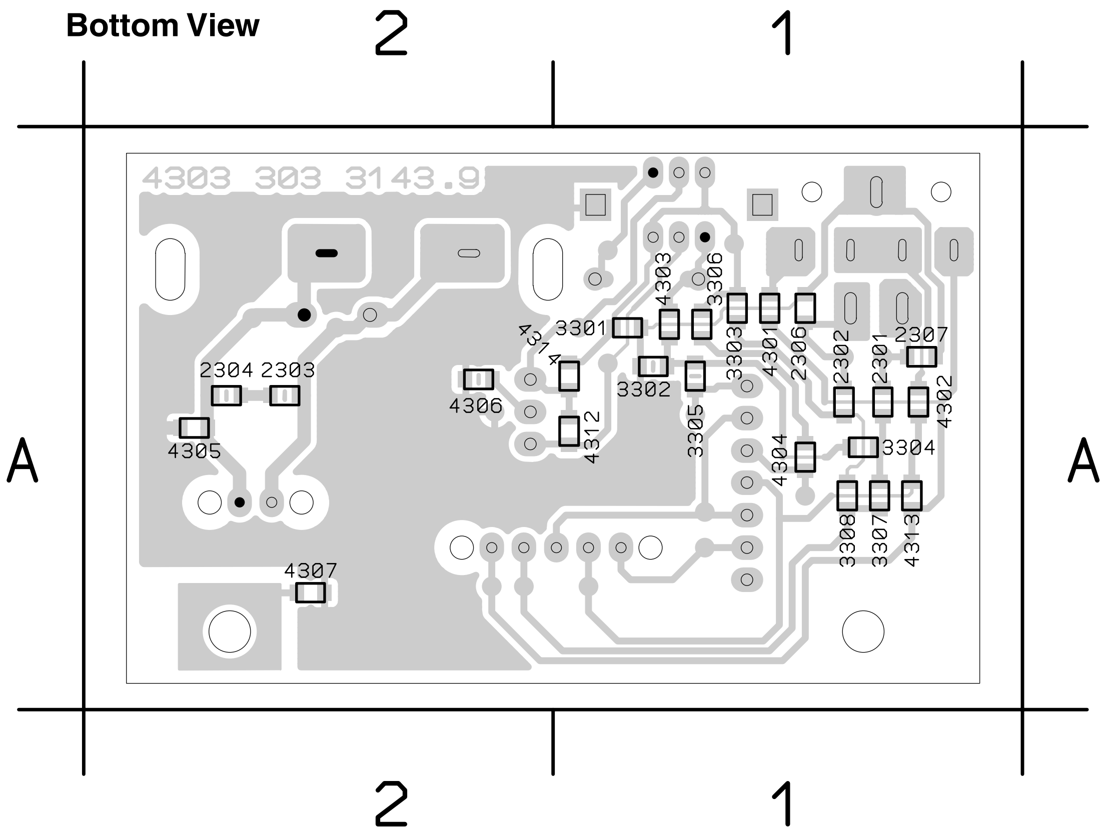
Top View



1
2
A
4303 303 3143.9
1307
9301
1302
2305
1306
1304
1305
1303
1301

1301	A2
1302	A2
1303	A1
1304	A2
1305	A1
1306	A1
1307	A1
2305	A2
9301	A1

Bottom View



2
1
A
4303 303 3143.9
2304
2303
4305
4306
4314
3301
4303
3306
4312
3302
3305
3303
4301
2306
2302
2301
2307
4302
4304
3304
3308
3307
4313
4307

2301	A1
2302	A1
2303	A2
2304	A2
2306	A1
2307	A1
3301	A1
3302	A1
3303	A1
3304	A1
3305	A1
3306	A1
3307	A1
3308	A1
4301	A1
4302	A1
4303	A1
4304	A1
4305	A2
4306	A2
4307	A2
4312	A1
4313	A1
4314	A1

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201201

8. Electrical Alignments

Index of this chapter:

1. Introduction.
2. Option settings.
3. Hardware alignments.
4. Software alingnments.

Notes: The Service Default Mode (SDM) and Service Alignment Mode (SAM) are described in chapter 5. Menu navigation is done with the 'CURSOR UP, DOWN, LEFT or RIGHT' keys of the remote control transmitter.

8.1 Introduction

8.1.1 Start Conditions

Perform all electrical adjustments under the following conditions:

- Power supply voltage: 230 V_{AC}/50 Hz (± 10 %).
- Connect the set to the mains via an isolation transformer with low internal resistance.
- Allow the set to warm up for approximately 20 minutes.
- Measure the voltages and waveforms in relation to chassis ground (with the exception of the voltages on the primary side of the power supply).
- Caution: never use the cooling fins/plates as ground.
- Test probe: Ri > 10 MΩ, Ci < 20 pF.
- Use an isolated trimmer/screwdriver to perform the alignments.

Perform all electrical adjustments with the following start settings (for all CRTs):

- Set LIGHT SENSOR ‘off’ (set ACTIVE CONTROL to 'off' with the remote control).
- Set BRIGHTNESS to ‘23’ (via PICTURE menu, set indicator somewhat below the centre (= 32) point).
- Set COLOUR ENHANCEMENT to ‘off’ (via PICTURE menu).
- **Set DIGITAL OPTIONS to 'Pixel Plus' (via PICTURE menu), unless otherwise stated.**
- Set DYNAMIC CONTRAST to ‘off’ (via PICTURE menu).
- Set CATHODE DRIVE at ‘15’ (via SAM - Alignments - General - Drive - Cathode).

8.1.2 Adjustment Sequence

Use the following adjustment sequence:

1. Modules, units and PWBs.
2. Set the correct TV-set ‘options’.
3. Rough adjustment of ‘Vg2’ and ‘Focus’.
4. Rough adjustment of ‘Geometry’.
5. Accurate adjustment of ‘Vg2’ and ‘Focus’.
6. Rough adjustment of ‘Geometry’.
7. Software alignments (cut-off, cathode drive, peak white, white drive, etc).

8.1.3 Factory Default Settings

In case something goes wrong during the alignments, use the following **factory default** settings:

- Contrast = 48 (≈ 3/4 of scale).
- Colour = 33 (28"), 32 (32"), or 31 (36").
- Sharpness = 3.
- Colour Enhancement = On.
- Tint = Normal.
- Digital Options = Pixel Plus.
- Dynamic Contrast = Medium.

8.2 Option settings

The microprocessor communicates with a large number of I^2C ICs in the set. To ensure good communication and to make digital diagnosis possible, the microprocessor has to know which ICs to address. The presence/absence of these specific ICs (or functions) is made known via the option codes.

You can set the 'hardware related' options via the SAM: 'Alignments - Options' or 'Option Numbers' menu.
You can set the 'software related' options via the SAM: 'Dealer Options' menu .

Important:

- After you have changed the option(s), save them via the 'Store' command.
- The new option setting is only active after the TV is switched 'off' and 'on' again via the mains switch (the NVM is then read out again).

8.2.1 Options

Select this sub-menu to set the initialisation codes (= options) of theTV via text menu's.

Table 8-1

Menu-item	Subjects	Options	Physically in the set
Dual screen/PIP	Aux type	None	Dual Screen/PIP module not present.
		Video Dual Screen	Dual Screen module present
		PIP	PIP module present
	Text Dual Screen	Yes	Text Dual Screen present (only for 16:9 sets)
		No	Text Dual Screen not present
	Aux Headph. Sound(optional)	Yes	
		No	
Teletext/EPG	TXT	Yes	Feature enabled
		No	Feature disabled
	NextView present	Yes	Feature enabled
		No	Feature disabled
	NextView type	Flashram	Flash-RAM (IC7013 on SSP) present
		No Flashram	Flash-RAM (IC7013 on SSP) not present
Communication	Easylink Plus	Yes	Feature enabled
		No	Feature disabled
Picture Tube	CRT Type	4:3	4:3 picture tube
		16:9	16:9 picture tube
	CRT size	28 / 32 / 36 / 29 / 34	Screen size in inches
	Picture Rotation(only for 16:9)	Yes	Frame rotation circuitry (IC7440 on LSP) present
		No	Frame rotation circuitry (IC7440 on LSP) not present
	Dynamic focus	Yes	Dynamic focus picture tube present
		No	Dynamic focus picture tube not present
	One point control	Yes	Feature enabled
		No	Feature disabled
	Anti-moirÈ filter	Yes	Not used
		No	Not used
Video repro	Featurebox type	Eco	PROZONIC not present
		Prozonic	PROZONIC present
		Falconic	FALCONIC present
		1050i/1250i	Progressive scan mode
		Eagle	Pixel plus mode
	Split Screen	Yes	
		No	
	Field memories	2	
		3	
	Lightsensor	Yes	Feature enabled
		No	Feature disabled
	Combfilter	Yes	Feature enabled
		No	Feature disabled
	Auto scavem	Yes	Feature enabled
		No	Feature disabled
	Picnic AGC	Yes	In 'Normal' operation: Yes
		No	During 'Drive' alignments: No
	Signalling bits	Yes	Format recognised
		No	Format not recognised
Audio Repro	Dolby	None	
		Pro Logic	
		Digital	MCS panel present
	Rear speakers	Corded	Not valid
		Virtual	Not valid
		Cordless	Active surroundbox present
	Acoustic system	FL7	Not valid
		FL8	Not valid
		FL9 Monitor	Not valid
		FL9 DAS	Not valid
		FL11	Soft design with full range speakers at both sides
Miscellaneous	Heatsink Present	Yes	Heatsink present on CRT panel (diagram F)
		No	Heatsink not present on CRT panel (diagram F)

8.2.2 Option numbers

Select this sub-menu to set all options at once (expressed in two long numbers).
An option number (or 'option byte') represents several options. When you change these numbers directly, you can set all options very fast. All options are controlled via eight option numbers.

Example: Option numbers 32PW9767/12:

1. **05984 12568 03840 00016**
2. **12326 00001 00000 04358**

The first line indicates the hardware related options 1 to 4, the second line is reserved for the software related options. Every 5-digit number represents 16 bits (so maximum number is 65536, if all options are set).

Table 8-2

Option Byte	Bit	Option name	Settings (given in decimal values)		Option number
Hardware Option 1	0	Feature Box	0 = Eco	1 = PROZONIC	Sum of HW Option 1
	1		3 = FALCONIC (bit 0+1)	2 = 1050i/1250i	
	2			4 = Eagle	
	3	Comb Filter	0 = Off	8 = On	
	4	Auto Scavem	0 = Off	16 = On	
	5	Field Memory	0 = 2 Memories	32 = 3 Memories	
	6	Light Sensor	0 = Off	64 = On	
	8	PICNIC	0 = Off	256 = On	
	9	PICNIC AGC	0 = Off	512 = On	
	10	FALCONIC	0 = FALCONIC v1	1024 = FALCONIC v2	
	11	LNA	0 = Off	2048 = On	
	12	WSS	0 = Off	4096 = On	
	13	Time Constant	0 = Normal	8192 = Fast	
Hardware Option 2	1	Dolby ProLogic	0 = Off	2 = On	Sum of HW Option 2
	2	Virtual Rear Speakers	0 = Off	4 = On	
	3	Cordless Rear Speakers	0 = Off	8 = On	
	4	Dolby Digital	0 = Off	16 = On	
	8	P50 (Easylink +)	0 = Off	256 = On	
	12	EPG	0 = Off	4096 = On	
	13	EPG type	0 = Type 2	8192 = Type 2C3	
Hardware Option 3	0	EXT3	0 = Off	1 = On	Sum of HW Option 3
	1	EXT4	0 = Off	2 = On	
	4	Dual Screen	0 = Off	16 = PIP	
	5			32 = Dual Screen	
	6	TXT/EPG Dual Screen	0 = Off	64 = On	
	7	AUX Headph. Sound	0 = Off	128 = On	
	8	Aspect Ratio	0 = 4:3	256 = 16:9	
	9	Tilt	0 = Off	512 = On	
	10	DAF	0 = Off	1024 = On	
	11	One Point Control	0 = Off	2048 = On	
	12	Heat Sink	0 = Off	4096 = On	
	14	Home Cinema	0 = Off	16384 = On	
Hardware Option 4	2	China IF	0 = Off	4 = On	Sum of HW Option 4
	4	Teletext	0 = Off	16 = On	
	5	China Text	0 = Off	32 = On	
Software Option 1	0	Auto TV	0 = Off	1 = On	Sum of SW Option 1
	1	Auto Store Mode	0 = None	2 = PDC/VPS	
	2		6 = PDC/VPS/TXT Page	4 = TXT Page	
	4	Picture Mute	0 = Off	16 = On	
	5	Demo Mode	0 = Off	32 = On	
	6	Virgin Mode	0 = Off	64 = On	
	12	TXT Preference	0 = TOP	4096 = FLOF	
	13	TXT Region	0 = East	8192 = West	
Software Option 2	0	CTI	0 = Off	1 = On	Sum of SW Option 2
Software Option 3					Sum of SW Option 3
Software Option 4	0	Cabinet		1 = FL7	Sum of SW Option 4
	1		3 = FL9 DAS (bit 0+1)	2 = FL8	
	2		6 = FL11 (bit 1+2)	4 = FL9 Monitor	
	3				
	8	Picture Tube Size	0 = 28"	256 = 32"	
	9		768 = 29" (bit 8+9)	512 = 36"	
	10			1024 = 34"	
	11				

When all the correct options are set, the sum of the decimal values of each Option Byte (OB) will give the option number.

Note: When the EAROM is replaced, all options will require a re-setting. To be certain that the factory settings are reproduced exactly, you must set both option number lines. You can find the correct option numbers on a CRT sticker inside the TV set.

8.2.3 Dealer Options

Table 8-3

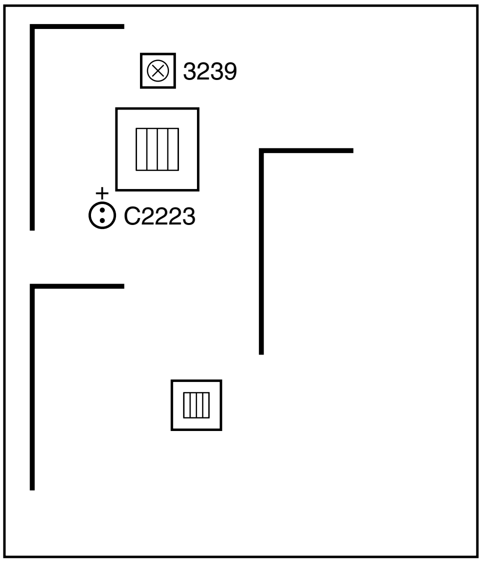
Name	Subjects	Options	Physically in set
Picture	CTI	Yes	CTI enabled
		No	CTI disabled
Personal	Blue Mute	Yes	Blue mute active, in case no picture detected
		No	Noise, in case of no picture detected
	Virgin Mode	Yes	TV starts up once with language selection menu, after mains switch on for the first time (virgin mode)
		No	TV does not starts up once with language selection menu, after mains switch on for the first time (virgin mode)
	Auto Store Mode	None	Autostore mode disabled (not in installation menu)
		PDC-VPS	Autostore mode via ATS (PDC/VPS) enabled
		TXT page	Autostore mode via ACI enabled
		PDC-VPS-TXT	Autostore mode via ACI or ATS enabled
	Demo Menu Enable	Yes	Demo menu enable
		No	Demo menu disable
	Auto TV	Yes	Auto TV mode enabled
		No	Auto TV mode disabled
Teletext	TXT Preference	TOP	Preference to TOP Teletext
		FLOF	Preference to FLOF Teletext
	East/West TXT	West	TXT characters for non -/58 sets
		East	TXT characters for -/58 sets

8.3 Hardware Alignments

8.3.1 Alignments on the Top Supply Panel (TSP)

+141 V (V_{BAT}) Supply Voltage

TSP (component side)



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061201

Figure 8-1

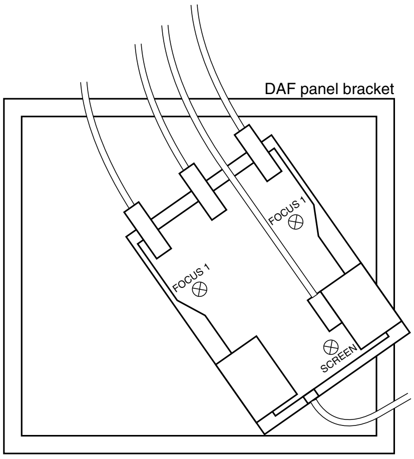
1. Switch the set 'off'.
2. Connect a voltmeter across C2223 (see also diagram B, $+V_{BAT}$).
3. Switch the set 'on'.
4. Use potentiometer R3239 (see figure above) to adjust the V_{BAT} supply voltage to +141 ± 0.5 V.

8.3.2 Alignments on the Large Signal Panel (LSP)

For the Focus and Vg2 alignment, see paragraph 8.3.3.

8.3.3 Alignments on the Double Astigmatic Focus (DAF) Panel

DAF Module



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030300

Figure 8-2

Vg2 Adjustment

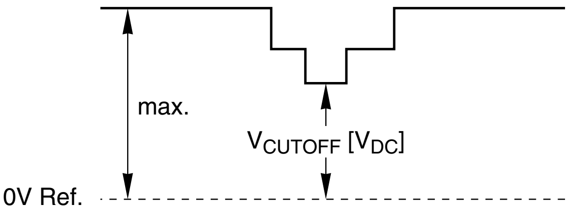
Method 1 (without oscilloscope)

1. Activate the SAM.
2. Select 'Alignments'.

3. Select the 'General' sub-menu.
4. Set 'Vg2 Test Pattern' to 'On'
5. You will now get OSD feedback during Vg2 alignment.
6. First turn the Vg2 (= SCREEN) potmeter on the DAF-module (or LOT) to the left (see figure above)
7. OSD feedback will show 'Out high'.
8. Turn the Vg2 potmeter slowly clockwise until you read 'In low'. This is the correct value.

Method 2 (with oscilloscope)

Waveform Vg2 alignment



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131000

Figure 8-3

In the frame-blanking period of the R, G and B signals (applied to the CRT), the 'HOP' video processor (IC7300) inserts a measuring pulse as reference for the Vg2 adjustment. See figure above.
Measure all three signals, and use the pulse with the highest DC-level for the Vg2 adjustment.

1. Go, via the MENU key, to the PICTURE menu, and set CONTRAST and BRIGHTNESS to ‘0’
   Service tip: First, write down the actual values so you can restore them after the alignment.
2. Activate the SDM (see chapter 5).
3. Connect the RF output of a pattern generator to the antenna input. Test pattern is a 'black' picture (blank screen on CRT without any OSD info) with a carrier frequency of 425.25 MHz.
4. Set the channel of the oscilloscope to 50 V/div and the time base to 0.2 ms. Trigger the scope external via a CVBS signal (e.g. via pin 19 of the SCART1 connection).
5. Ground the scope at the CRT panel ('cold' side) and connect a 10:1 probe to one of the cathodes of the picture tube socket (see diagram F).
6. Measure the 'cut off' pulse during the first full line after the frame blanking (see figure above). You will see two pulses, one being the 'cut off' pulse and the other being the 'white drive' pulse (measure the pulse with the lowest value, this is the cut-off pulse).
7. Measure all three cathodes, and select the one with the highest V_{DC} value for the alignment. Adjust the $V_{CUT\ OFF}$ of this gun with the SCREEN potentiometer on the LOT (see figure 8-5) to the correct value:
   – for 28” CRTs: 160 ± 3 V_{DC}.
   – for 32” CRTs: 170 ± 5 V_{DC}.
   – for 36” CRTs: 170 ± 3 V_{DC}.
8. Restore CONTRAST and BRIGHTNESS to the normal settings (see point 1).

Focus Alignment

Tune the set to a ‘circle’ or ‘crosshatch’ test pattern (use an external video pattern generator), and set BRIGHTNESS, COLOUR and SHARPNESS to nominal, and CONTRAST to maximum.
Now there are three set executions:

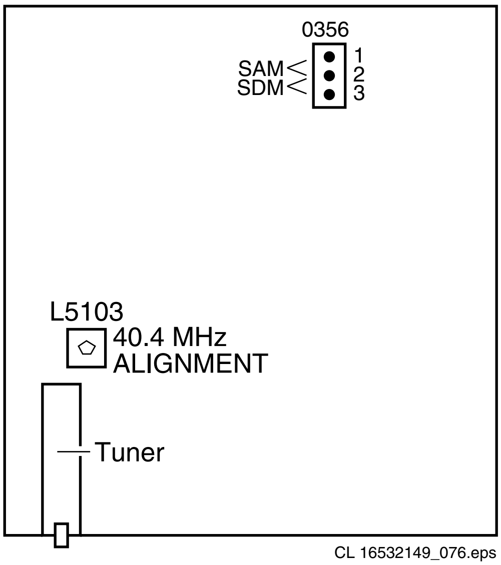
1. **For picture tubes with potmeters on the DAF module**. Align the focus, by means of the 2 focus potentiometers on the DAF-module (above the LOT, see figure 8.2) until the horizontal and vertical lines at 1/4 from east and west, at the height of the centre line, are of minimum width without introducing a visible haze. First, align the FOCUS1 (green) and then the FOCUS2 (black) potentiometer.
2. **For picture tubes with potmeters in the LOT**. Adjustment is identical.
3. **For 32' Real Flat picture tubes**. First, align the ‘static’ focus potmeter (black) until the vertical lines, at the height of the centre line, are of minimum width without introducing a visible haze. Then, align the ‘dynamic’ focus potmeter (green) until the vertical lines, at the height of the centre line, are of minimum width without introducing a visible haze.

Repeat steps if necessary.

8.3.4 Alignments on the Small Signal Panel (SSP)

40.4 MHz Neighbour-channel Sound Trap

SSP (component side)



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061201

Figure 8-4

1. Tune to a checker board test-pattern (system BG - and with a carrier frequency of 475.25 MHz).
2. Connect an oscilloscope (trigger line frequent) to pin 19 (CVBS out) of the SCART1 connection.
3. Align coil L5103 (on SSP, diagram K1) completely downwards (see figure above).
4. Align the coil upwards till under- and overshoot arise at the black/white and white/black transitions in the video signal (see figure below).
5. Align the coil downwards again until above mentioned under- and overshoot is just disappeared.

Waveform 40.4 MHz Alignment

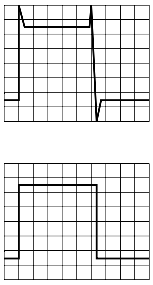

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Figure 8-5

8.3.5 Alignments on the Full Dual Screen (FDS) Panel

These alignments are of interest when ICs, e.g. HIP (IC7501-TDA9320H) or EAROM (IC7991-M24C04), are exchanged on the FDS-module, or if the FDS Tuner (UV1316) has been exchanged.

40.4 MHz Neighbour-Channel Sound Trap

1. Tune the FDS-module to a checker board test-pattern (system BG - and with a carrier frequency of 475.25 MHz). See to it that the main program of the set is tuned to another channel.
2. Connect an oscilloscope (trigger line frequent) to pin 19 (CVBS out) of the SCART2 connection. This output is WYSIWYR (what you see is what you record)
3. Align the coil L5103 (on FDS, just below the tuner) completely downwards.
4. Align the coil upwards till under- and overshoot arise at the black/white and white/black transitions in the video signal (see figure above).
5. Align the coil downwards again till above mentioned under- and overshoot is just disappeared.

IF AFC

See paragraph ‘Software Alignments - General - VDS/PIP - IF AFC‘ below.

Tuner AGC

See paragraph ‘Software Alignments - General - VDS/PIP - Tuner AGC‘ below.

8.3.6 Alignments on the Surround Transmitter Module (diagr. R)

This alignment can only be performed when having mentioned (in alignment instructions) equipment.
Limited repair can be exercised if defective circuit is in the area that no alignment is needed.
If defective part is in circuitry where alignments are necessary, two things can be done:

- Swap panel by a new one.
- If alignment equipment is available, module can be aligned according described alignment-instructions.

Frequency Deviation Level of Transmitter

1. Insert on test points R1 (= F103) and R2 (=F106) a sine wave signal of 400 Hz with a amplitude of 3 V_{RMS}.
2. Align potmeter 3157 such, that the frequency-deviation is 75 kHz (+/- 5 kHz). This corresponds with a amplitude of 80 mV_{RMS} (230 mV_{PP}) on testpoint R11 (=F112).

8.3.7 Alignments on the Surround Receiver Module (diagram U)

Surround Receiver Component Side

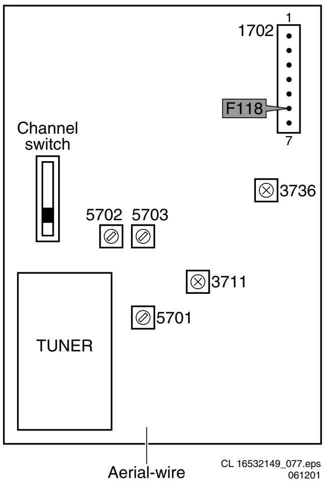

Figure 8-6

This alignment can only be performed when having mentioned (in alignment instructions) equipment.
Limited repair can be exercised if defective circuit is in the area that no alignment is needed.
If defective part is in circuitry where alignments are necessary, two things can be done:

- Swap panel by a new one.
- If alignment equipment is available, module can be aligned according described alignment-instructions.

Note: the aligned components are lacquered, so clean them first.

Alignment of FM-Detection Coil

Use a RF-generator as source: 1 mV, modulation 75 kHz.

1. Dependent of the receiver-version, place receiver on channel 4 (433, 926, or 864 MHz).
2. Align coil 5701 such, that a maximal audio frequency is detected at test point U6 (= F114).
3. Now swap the generator from frequency -150 kHz to +150 kHz, with the same amplitude and modulation.
4. Align 5107 such, that the ‘stop’ pulse (at F104, cathode of 6701) is symmetrical around 10.7 MHz (low value is < 0.3 V, high value is > 3.5 V.

Alignment of Tuned/Mute Level

Use a RF-generator as source: 3 to 7 µV, modulation 75 kHz.

1. Dependent of the receiver-version, place receiver on channel 4 (433, 926, or 864 MHz)
2. Align potmeter 3711 such, that mute-level is down at 3 µV and high at 7 µV at pin 6 of connector 1702 (=F118).

Alignment of VCO-Demodulator

Use a RF-generator as source: 1 mV, unmodulated.

1. Dependent of the receiver-version, place receiver on channel 4 (433, 926, or 864 MHz).
2. Align potmeter 3736 such, that you measure 100 kHz (+/- 300 Hz) at test point F131 (pin 11 of TDA1578A).

8.4 Software Alignments

Put the set in the SAM mode (see chapter 5). The Service Alignment Menu will now appear on the screen.
Via 'Alignments' the following submenu's can be selected:

1. **General:** all non-geometry related adjustments.
2. **Normal Geometry:** General geometry alignments.
3. **Super Wide Geometry:** Geometry alignments for the 'Panorama' position in 16:9 sets.
4. **Options:** Setting the initialisation codes in the TV via menu's.
5. **Option Numbers:** All options together, expressed in two long numbers. The original factory setting for these numbers can be found on the picture tube sticker on the inside of the set.
6. **Store:** Store all alignments.

Notes:

- **Important:** Once you have completed the alignments/settings, select the item 'Store' (in main Alignment menu) to save all the values in the permanent memory of the set.
- If you changed and stored the Option codes, switch the set 'off' and 'on' with the mains switch. This, to activate the new settings. When switching via Stand-by, the option code settings are NOT read by the microprocessor.
- If an empty EAROM (permanent memory) is detected, all settings are set to pre-programmed default values.
- A built-in test pattern can be called up in some sub-menus. You can activate this pattern via the 'Test pattern on/off' item. The test pattern only appears AFTER the specific alignment is selected. The test patterns are generated by the Teletext-IC (OTC).

The alignments are explained now in the sequence of the sub-menu.

8.4.1 General

Drive

Method 1 (with colour analyser)

1. Go to the SAM 'Alignments - General - Drive' menu
2. Switch the ‘Test pattern’ to 'on' (you get a white block in middle of the image now).
3. Set 'Tint' to 'Normal'.
4. First, align the 'Cathode parameter'. This value is dependent of the picture tube size (see table 'Cathode parameter' for the colour-analyser readings).
5. Now, set the white levels for the three Tint-settings 'Normal', 'Warm' and 'Cool'. Align to the next values (see table 'White levels').

Table 8-4

CRT size/type	Light output (cd/m^2)
28" RF WS	390
32" RF WS	370
36" RF WS	330

Table 8-5

	Cool	Normal	Warm
X	280	289	314
Y	287	299	329
Temp. (K)	10200	8700	6500

Method 2 (without colour analyser)

1. Even without having a colour-analyser you can set some parameters. This is the next best solution. These parameters are average values coming from production (statistics).
2. Set 'Tint' to 'Normal'.
3. First, set the 'Cathode parameter' to the value '5'.
4. Now set the R-, G- and B-parameters for the three tint-settings 'Cool', 'Normal' and 'Warm'. See table 'Tint-settings' below for the values.
   Note: These values are only for the 32" CRT. At the moment of writing, the information for the 28 and 36" CRTs was not yet available. As soon as they are available, we will publish a 'Service Information'.
5. **Red BL offset**: herewith the Black Level can be aligned very precise. Default value is ‘7’.
6. **Green BL offset**: herewith the Black Level can be aligned very precise. Default value is ’7’.

Table 8-6

32" CRT	δ Cool	Normal	δ Warm
R	-1	40	+ 2
G	0	29	0
B	+ 4	34	- 10

Luminance Delays

With the 'Luminance delays' alignment the luminance information is placed on the chrominance information (brightness is pushed onto the colour). Use a colour bar/grey scale pattern as test signal.

- **Lum. Delay PAL**: Apply a PAL colour bar/grey scale pattern as a test signal. Adjust 'Lum. Delay PAL' until the transients of the colour part and black and white part of the test pattern are at the same position.
- **Lum. Delay SECAM**: Apply a SECAM colour bar/grey scale pattern as a test signal. Adjust 'Lum. Delay SECAM' until the transients of the colour part and black and white part of the test pattern are at the same position.
- **Lum. Delay Bypass**: apply a NTSC colour bar/grey scale pattern as a test signal. Adjust value until the transients of the colour and black & white part of the test area are at the same position.

EHT Compensation

Fixed setting: 0

Soft Clipper

Fixed setting: Pwl + 0%

Luma Gain

Fixed setting: 1

IF AFC

The SAM-mode is needed to make alignment, a test generator to make signal and the Installation-menu to check the 'Fine Tune' value.

Supply, via a video generator (e.g. PM5518), a TV-signal with a signal-strength of at least 1 mV and a frequency of 475.25 MHz. Use BG if possible, otherwise match the system of your generator with the received signal in the set.

Alignment procedure:

1. Go to the 'Installation' menu.
2. Select 'Manual installation'.
3. Tune the TV-set to the system and frequency described above via 'Search - 475 - OK'.
4. If the frequency showed in the line 'Fine tune' is between 475.18 MHz and 475.31 MHz, you don't need to re-adjust the IF-AFC.
5. If not, adjust the frequency in the 'Fine tune' line to 475.25 MHz and 'Store' the program (this is very important because this will disable the AFC algorithm).
6. Now go to the SAM and select 'Alignments - General - IF AFC'.
7. During the 'IF AFC'-parameter adjustment, one can see OSD feedback in the top of the screen. The OSD feedback can give 4 kind of messages:

Table 8-7

AFC-window	AFC-frequency vs. reference
Out	High
In	High
In	Low
Out	Low

The first item (‘In’ or ‘Out’) informs you whether you are in or out the AFC-window.

The second item (‘High’ or ‘Low’) informs you about whether the AFC-frequency is too high or too low.

1. First you must align the 'IF AFC'-parameter such that you come into the AFC-window (= 'In')
2. Then you must look for the point where the 'IF AFC'-parameter changes from High to Low. This level is the value you are looking for.
3. After adjustment 'Store' the value.
4. Now return to the 'Installation' menu.
5. Select 'Manual Installation - Search - 475 - OK' and 'Store'. This will set the AFC 'on' again.

Service-Tip: If you do not trust the accuracy of the frequency of your Service-generator, first 'measure' with 'Fine tune'-line (manual install-menu) of a good set your video generator.

Tuner AGC

1. Supply a TV-signal, with a frequency of 475.25 MHz and a signal-strength of about 2 mV.
2. Measure the DC-voltage on pin 1 of the Tuner (position 1200). With the 'Tuner AGC'-alignment in the SAM-menu, this voltage can be aligned.

3. Alignment is correct when the DC-voltage is just below 3.8 V.

Blend Intensity

Use this alignment when the micro controller or HOP-IC has been replaced.
It aligns the level of transparency of the menu-picture blended into the main-picture.

1. Position the BRIGHTNESS-, CONTRAST- and COLOUR setting in the middle position (picture-menu).
2. Apply a signal with a 100 % white video-pattern.
3. Connect an oscilloscope to pin 7 of connector 0340 of the CRT panel and measure the Red output level.
4. Align 'blending intensity'-parameter such, that the blended signal is 65 % of the black-white amplitude. Practically this will be about 1.3 V (blended signal) versus 2 V (full white signal). The parameter is adjustable between 0 and 31.

Adjust Peak White Limiter

Enter for all picture tubes the value '4'.

Vg2 Test Pattern

Here, you can activate the Vg2 Test pattern. See paragraph ‘Hardware Alignments’ for a description.

VDS/PIP (optional)

With this adjustment, you can set the following parameters (which are stored in the local memory IC7991):

- **IF AFC.** This alignment is identical to the one described above.
- **Tuner AGC**. See description below:
  1. Supply a video signal, with a frequency of 475.25 MHz and a signal-strength of about 2 mV to the set.
  2. Measure the DC-voltage on pin 1 of the tuner 1102 (easiest way is to measure on SMD capacitor C2116, just underneath the tuner).
  3. Align the voltage via the menu. The alignment is correct when the DC-voltage is just below 3.8 V

8.4.2 Normal Geometry

Note: Use for all geometry alignments an **external** pattern generator with a geometry pattern (e.g. crosshatch).

Geometry Alignments

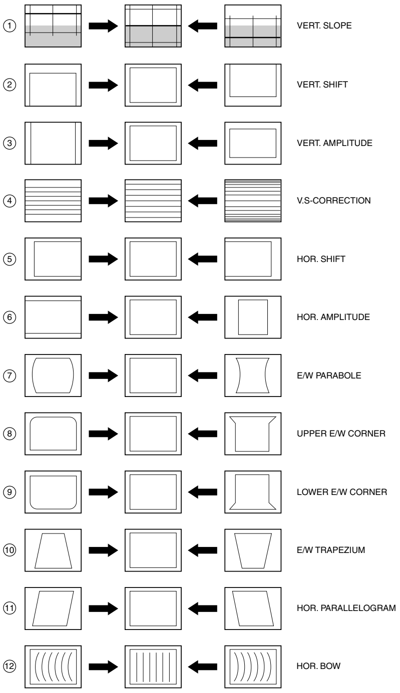

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Figure 8-7

Vertical Slope

This alignment is meant to align the zero crossing of the frame-deflection to the mechanical middle of the picture tube.

1. First set the start conditions for 16:9 sets: '**V. S-correction**' value on '0' for the 28" sets, and '9' for the 32" and 36" sets. Position the boundary-stripes of the test pattern on the edges of the picture tube.
2. Align '**V. slope**' (during alignment the below-half of the picture is blanked). Match the middle line of the test pattern with the upper edge of this blanking picture. Push the MENU button again, to return to the previous menu.

Service tip: When the set is equipped with a rotation coil, use this menu item to check its correct alignment. If alignment is not correct, go to the INSTALLATION menu, choose SETUP, press OK, and choose PICTURE TILT. With the use of a crosshatch test pattern, align it to a correct horizontal picture.

Vertical Amplitude and Centring

1. Use '**V. amplitude**' to align the vertical amplitude so that the entire test pattern is visible.
2. Use '**V. shift**' to align the picture vertically in the middle.
3. Repeat the '**V. amplitude**' alignment if necessary.

Vertical S-correction

Align '**V. S-correction**' such that a block at the top of the picture has the same height as a block in the middle of the picture.

Horizontal amplitude and centring

1. Use '**H. amplitude**' to align the horizontal amplitude so that the entire test pattern is visible.
2. Use '**H. shift**' to align the picture horizontally in the middle.
3. Repeat the '**H amplitude**' alignment if necessary.

Note: If you cannot compensate the drift in the horizontal shift, go to the next subject 'DC-shift'.

DC-shift

In case the horizontal linearity in wide-screen mode is out of tolerance, add a 'DC-shift correction' panel (3104 328 00641) to connector 0393 on the LSP (see figure below).
Caution: Be sure to switch 'off' the set first. On this DC-shift panel, cut position 9031 for correction to the right or cut position 9030 for correction to the left.
Caution: never plug in a not pre-aligned module in a set !!!

DC-shift Connector

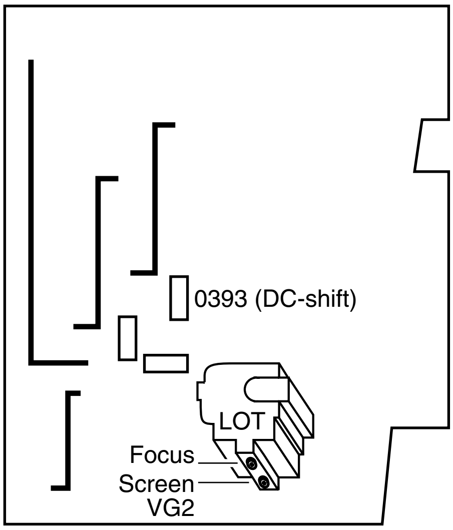

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Figure 8-8

In 32" and 36" sets, an **adjustable** DC-shift feature is always present. This is located on the DAF panel (potentiometer 3050). How to align:

1. Increase BRIGHTNESS to '45' (3/4 of scale).
2. Set DC-shift potmeter (item 3050 on DAF module) at midway. Maybe it is necessary to unhook the DAF module first, in order to access this potmeter (see chapter 4).
3. Apply a circle as test pattern.
4. Enter the SAM, choose ALIGNMENTS, and NORMAL GEOMETRY.
5. Write down the H. AMPLITUDE value.
6. Reduce H. AMPLITUDE until overscan and grey zones at the left and right are well visible.
7. Adjust H. SHIFT until picture is positioned symmetrically in the grey zone.
8. Recall the H. AMPLITUDE value.
9. Turn potmeter 3050 on the DAF module, until the picture edges are just visible.
10. Store the new value for H. SHIFT into the NVM (via the main Alignment menu).

East/west alignment

1. Use '**East/West Parabola**' to align the vertical lines until straight.
2. Use '**Upper East/West corner**' to align the vertical lines in the upper corners until straight.
3. Use '**Lower East/West corner**' to align the vertical lines in the lower corners until straight.
4. Use '**East/West Trapezium**' to align for a rectangular.
5. Use '**Horizontal Parallelogram**' to align for straight vertical lines if necessary.
6. Use '**Horizontal Bow**' to correct the E/W parabola such that it becomes symmetrical.

Repeat steps 1 to 6 if necessary.

8.4.3 Super wide geometry

You only need to set the following values (if the normal geometry alignment has been performed correctly):

- **V. shift:** enter here the value of the 'normal geometry' alignment.
- **V. amplitude:** adjust image such that the outer vertical lines are just visible.
- **V. S-Correction:** enter here the value of the 'normal geometry' alignment.
- **H. amplitude:** enter here the value of the 'normal geometry' alignment subtracted by 2.
- **E/W Parabola:** enter here the value of the 'normal geometry' alignment.

8.4.4 100Hz Geometry

As all alignments are done in Pixel Plus mode @ 75 Hz, the 100 Hz mode needs an extra alignment:

- Select '**100Hz Geometry**'. The set automatically switches to 100 Hz mode.
- **V. slope:** Match the middle line of the test pattern with the upper edge of this blanking picture. Push the MENU button again, to return to the previous menu.
- After the alignment, return to the previous menu. The set automatically returns to 'Pixel Plus' mode.

9. Circuit Descriptions, Abbreviation List and Data Sheets

Index of this chapter:

1. Introduction
2. Power Supply
3. Video Path
4. Feature Box 7
5. Auto Scavem
6. Wireless Surround Amplifier
7. Abbreviation List
8. IC Data Sheets

Note:

- Only **new** circuits (compared to the MG3.1E) are described. For the other circuit descriptions, see the training manual of the MG3.1E. This manual is available in different languages:
  - 3122 785 10007 = English (GB)
  - 3122 785 10008 = Dutch (NL)
  - 3122 785 10009 = German (D)
  - 3122 785 10011 = French (F)
  - 3122 785 10012 = Italian (I)
  - 3122 785 10013 = Spanish (E)
- Figures can deviate slightly from the actual situation, due to different set executions.
- For a good understanding of the following circuit descriptions, please use the diagrams in chapter 6 and 7. Where necessary, you will find a separate drawing for clarification.

9.1 Introduction

In the MG3.2E, a high-resolution mode is introduced, in order to obtain a sharper picture. This feature is called ‘Pixel Plus’. It includes the following changes:

- A new 'Feature Box version 7' (FBX7), which contains the ‘Eagle’ IC. This IC is responsible for the definition improvement.
- With ‘Pixel Plus’, the pixels in horizontal direction are doubled.
- The number of vertical lines per picture is increased to 833, which improves the vertical definition.
- The frame deflection works on 75 Hz (which is the best compromise without introducing flicker).
- The signal bandwidth from FBX7 to picture tube is increased, in order to be able to cope with these high definition signals.
- A new Scavem circuit is necessary for the higher definition. This Scavem is dependent of the used picture tube and the picture content, and is controlled by the AutoTV algorithm. That is why it is called ‘Auto Scavem’.

In addition, the Top Power Supply is adapted, so it can deliver more power.

In the 'Digital Options' menu, you now have three options:

- Digital Scan (100 Hz)
- Pixel Plus (75 Hz)
- Double Lines (50 Hz).

In all modes, the line frequency is 31250 Hz. Pixel Plus is the preferred mode. That is why the optimal geometry of this chassis is set for 75 Hz.

Standard OSD is developed for 625 lines. Therefore, in 833 lines mode, this will give smaller fonts and a different screen position. To solve this, larger fonts are used.

In 'TXT' and 'TXT Double Window' mode, the set is switched to 'Natural Motion'. For subtitles 'Pixel Plus' is used, this will result however in somewhat smaller fonts. In 'Full Double Window' mode, the set is in 'Pixel Plus' mode.

9.2 Power Supply (Diagram B)

There are two important changes on the Top Supply Panel (TSP):

The mains harmonic coil (item 5280) is now mounted directly on the supply board, i.s.o. using an external 'Mains Harmonic' unit.

The 8V6 and 5V2 supplies have to deliver more power. This is accomplished in the following way. The existing DC/DC converter MC34167 was not able to deliver a higher output current and had a rather high working temperature. Therefore, it is replaced by another type, the L4977A (item IC7211). This IC uses the same working principle, but has a higher maximum output current, and works at a lower temperature. However, it needs a higher supply voltage of 24 V_{DC} (i.s.o. 16 V_{DC}). This higher supply voltage is achieved by changing transformer T5202. The output voltage of the converter is determined by the value of R3230 and 3231. A disadvantage of the new DC/DC converter is that it needs more external components, and therefore needs more space. This extra space is found by changing the Standby Supply circuitry. This change involves the replacement of items TS7100 to 7103 by a single TNY256 IC (pos. 7103). This IC generates drive-pulses for transformer T5101. The maximum frequency is 132 kHz at full load, and decreases with smaller loads. The working principle of this IC is called 'cycle skipping'. It implies that the IC supplies a pulse train, to which cycles are removed or added, hereby changing the output frequency. One disadvantage of using this IC is the increased chance of introducing picture spook. Therefore, capacitors 2101 and 2106 are added, to minimise this effect. Regulation of the 5 V Standby voltage happens as before (via opto-coupler 7104). If this feedback circuit is interrupted, the IC starts to work in an open loop configuration, and the output voltage will rise rapidly to 12 V. To prevent this, an Over Voltage Protection (OVP) circuit is added (thyristor 7106 and zener 6108). If the 5 V Standby voltage exceeds the zener voltage (6.8 V), the thyristor is triggered, and will limit the output voltage.

9.3 Video Path

9.3.1 Power Supply Tuner (Diagram K1)

The power supply of the Tuner is now controlled with a voltage stabiliser (item IC7113). This is done, to assure a more accurate power supply to the tuner.

9.3.2 Anti-Plop Circuit (Diagram K3)

Anti-plop

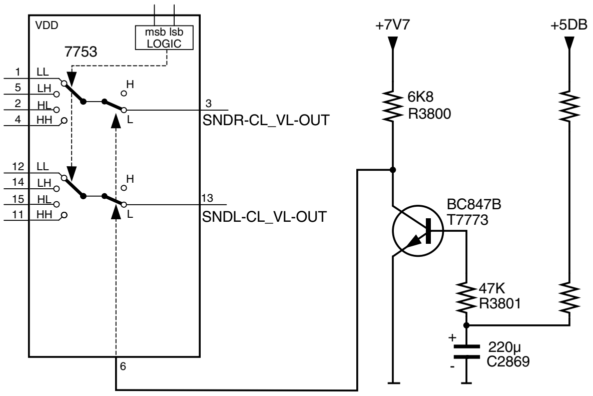

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Figure 9-1

As capacitor C2869 is not charged at power start-up, transistor TS7773 will block and pin 6 of audio switch IC7753 is 'high'. This means that the sound is muted. After charge-up, TS7773 will conduct and the audio signals are passed.

9.3.3 RGB Path (Diagram F)

RGB signal path

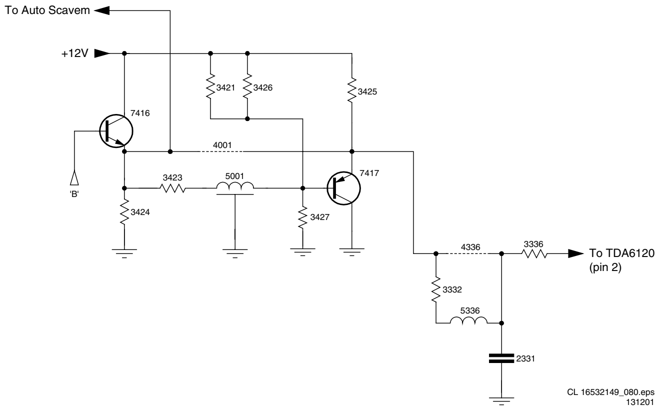

To Auto Scavem
+12V
7416
3421
3426
3425
4001
'B'
3423
5001
7417
3424
3427
4336
3336
To TDA6120
(pin 2)
3332
5336
2331
CL 16532149_080.eps
131201

Figure 9-2

The RGB signals from the HOP are fed to three identical amplifiers (TDA6120). We take one of them (B, item 7330) as example for the description. After emitter follower TS7416, the signal is tapped for the Auto Scavem circuitry, and is fed to TS7417. This emitter follower sends the signal, with the same DC-voltage, to the amplifier. In order to cope with the higher definition, this IC has a larger bandwidth (20 MHz) as the one used in the MG3.1E.

9.4 Feature Box 7 (Diagram L)

The objective for this chassis is was, to reach a sharper picture by means of a higher definition.
This is achieved via the so-called 'Pixel Plus' feature. So, what is Pixel Plus?

9.4.1 Introduction

In the Feature Box 7 (FBX7), a new IC is used, called the 'Eagle'. This IC does the following picture improvements:

- Horizontal: increases from 840 to 1680 pixels per line (the number of pixels is doubled per line). This, by itself, does not mean an improvement in definition however. To achieve that, the new pixels are digitally processed inside the Eagle with Luminance Transient Improvement (LTI) and Peaking. This will give the new pixels extra picture information, which results in steeper slopes and contrast improvement at details.
- Vertical: increases from 625 lines (PAL) to 833 lines. Also, those new lines are processed inside the Eagle with LTI and Peaking, again resulting in lines with extra picture information.
- The line frequency is fixed on 31250 Hz and the frame frequency at 75 Hz (this will give no frame-flicker). Also, other modes, like 'Digital Scan' are still possible.
- The colour enhancement features of the TOPIC are done by the Eagle.

9.4.2 Block diagram

FBX7

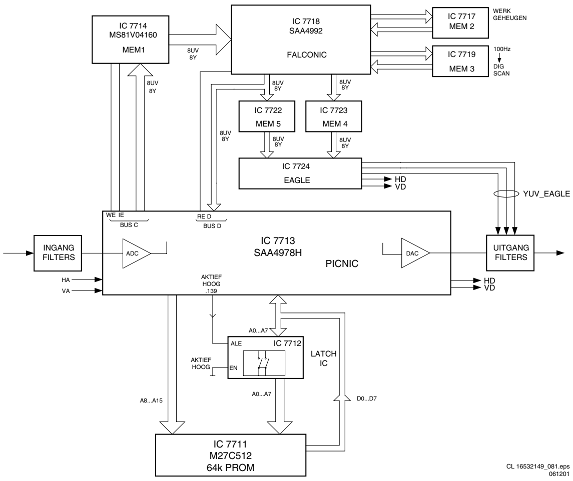

IC 7714
MS81V04160
MEM1
8UV
8Y
IC 7718
SAA4992
FALCONIC
IC 7717
MEM 2
WERK
GEHEUGEN
IC 7719
MEM 3
100Hz
DIG
SCAN
IC 7722
MEM 5
IC 7723
MEM 4
IC 7724
EAGLE
HD
VD
YUV_EAGLE
WE IE
BUS C
RE D
BUS D
INGANG
FILTERS
ADC
IC 7713
SAA4978H
PICNIC
DAC
UITGANG
FILTERS
HA
VA
AKTIEF
HOOG
.139
A0...A7
ALE
IC 7712
LATCH
IC
AKTIEF
HOOG
EN
A8...A15
D0...D7
IC 7711
M27C512
64k PROM
CL 16532149_081.eps
061201

Figure 9-3

The 50 Hz YUV signals, coming from the HIP, are fed to the PICNIC via an anti-aliasing filter.
The (AABB) frame frequency doubling is done by the PICNIC (SAA4978, 160 pins QFP) together with a field memory (MEM1). This IC can handle most 100 Hz functions (except Progressive Scan).
This PICNIC has an internal CPU and a (small) integrated ROM. The actual FBX7 software is located in an external ROM (item 7711). In order to limit the number of connections between the PICNIC and the external ROM, a number of lines are used twice. The lines A8 to A15 are fixed lines, while the lines A0 to A7 are made switchable with the eight data lines of the ROM. This is done via a Latch (item 7712), which is controlled by pin 139 of the PICNIC (the ALE signal).
Via bus 'C', a digitalised signal is presented to MEM1, which is used for the 50 to 100 Hz conversion. The signal goes further via the data-bus to the FALCONIC. This IC has the following functions:

- Line flicker reduction.
- Digital Noise Reduction (DNR).
- Progressive scan (262.5 - 525 or 312.5 - 625 lines per frame).

At the end, the digital YUV signals enter, via MEM4 and MEM5, the Eagle IC.
This IC has the following functions:

- Luminance Transient Improvement (LTI).
- Peaking.
- Programmable number of lines.
- Programmable number of pixels per line.
- Demo mode (split screen).
- Improved colour transients (CTI) and colour enhancement (TOPIC).
- Improved vertical zoom.

The digital YUV-signals from the Eagle go, via a passive output filter, to the HOP.

As only the Eagle IC is new, it is described below in more detail. For a detailed description of the other ICs, please check the training manual of the MG3.1E.

9.4.3 Eagle (Diagram L2)

Introduction
Some strong picture improvements are carried out inside the Eagle, which all contribute to the excellent picture quality. These improvements are:

- LTI (both horizontal and vertical).
- CTI (only horizontal).

- Peaking (both horizontal and vertical).
- More pixels per line.
- More lines per frame.
- Better colour transitions.

By means of over sampling, the video signals get a sample frequency of 64 MHz, a bandwidth of 20 MHz, and 1680 pixels per line (was 32 MHz, 10 MHz and 840 pixels/line). This requires two extra field memories (MEM4 and MEM5).

The Eagle can handle four different modes:

- **Digital Natural Motion (PAL)**:
  100 Hz, 2fH, 2:1 Interlace (1680 pixels x 625 lines)
- **Pixel Plus (PAL)**:
  75 Hz, 2fH, 2:1 Interlace (1680 pixels x 833 lines)
- **Double Lines (PAL)**:
  50 Hz, 2fH, 2:1 Interlace (1680 pixels x 1250 lines)
- **Pixel Plus (NTSC)**:
  60 Hz, 2fH, 2:1 Interlace (1680 pixels x 1050 lines)

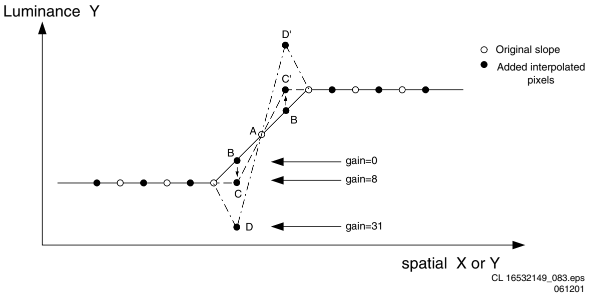
LTI (Luminance Transient Improvement)

The main objective of LTI is a steeper slope at contrast transitions (e.g. from 10 mV to 900 mV within 3 pixels i.s.o. 5 pixels for one detail). It is based on waveform altering around a signal jump.

Important: The LTI, as used in the Eagle, is designed for interpolated picture contents. This means that for pixel/line doubling, one of the two pixels/lines is an interpolated value. When a picture jump is interpolated, you will get extra room to make it steeper (you get extra pixels to describe the slope). Without interpolation, you cannot use this kind of LTI.

- LTI can add 'ears' to the waveform at the jump (a kind of controlled overshoot).
- LTI 'estimates' the frequency of the jump and will adapt the amplification to this frequency.
- LTI is applied both horizontal as vertical.
- LTI is amplitude dependent. This means that only 'big' jumps are processed. It works with a threshold, which is coupled to the noise meter via the Auto TV software.
- LTI is also frequency dependent. This means that it is distributed over the slopes. When there are many steep slopes in the signal, LTI will only process the steepest ones. If there are only a few slopes, LTI will process all of them. This is fully hardware implemented.

Horizontal LTI



CL 16532149_083.eps
061201

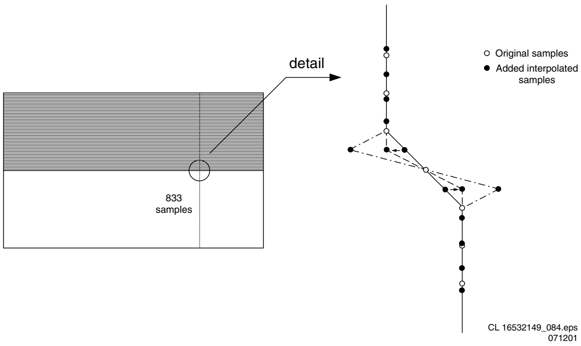
Figure 9-4

For horizontal LTI, the number of pixels is doubled (64 MHz) by means of interpolation. Pixel A at the transition will keep its luminance value, while the (new) pixels B can have a luminance value of zero to max. 31. For example:

- Pixels B can keep the same value (gain = 0)
- Pixels B can get the value of C and C' (gain = 8), which will give a steeper slope.
- Pixels B can also get the value of D and D' (gain = 31), which will give an even steeper slope with the so-called 'ears'. These 'ears' will give a **contrast** improvement.

For CTI, the same principle is used, in order to get better **colour** transitions.

Vertical LTI



CL 16532149_084.eps
071201

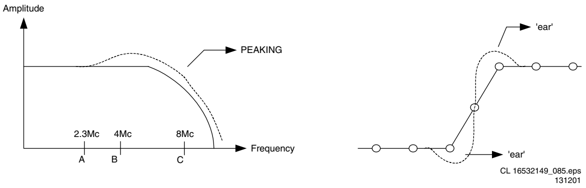
Figure 9-5

The principle for vertical LTI is the same as for horizontal LTI. The shift from 625 to 833 lines is done by means of a scaler. With these extra interpolated samples, it is possible to create steeper slopes, possibly with 'ears'.

Peaking/Coring

The objective of 'peaking' is contrast improvement (e.g. from 50 to 70 mV_{PP} for one detail).
It uses a noise threshold (coring = non-linear filtering around zero-level), thus it works everywhere in the picture (except below the threshold level).
The added difference signal is frequency dependent, which results in frequency dependent contrast improvement. When the difference signal becomes too large, the peaking is reduced (smartness).

Peaking



CL 16532149_085.eps
131201

Figure 9-6

To obtain above shown filter characteristic, filters are set at three parameters (A, B, and C). In this way, only the higher frequencies are 'lifted'. After sending the luminance signal through these filters, the filter output is added to the original signal. In this way, the so-called 'ears' are created, together with the steeper slopes. These 'ears' will give a **contrast** improvement at details.

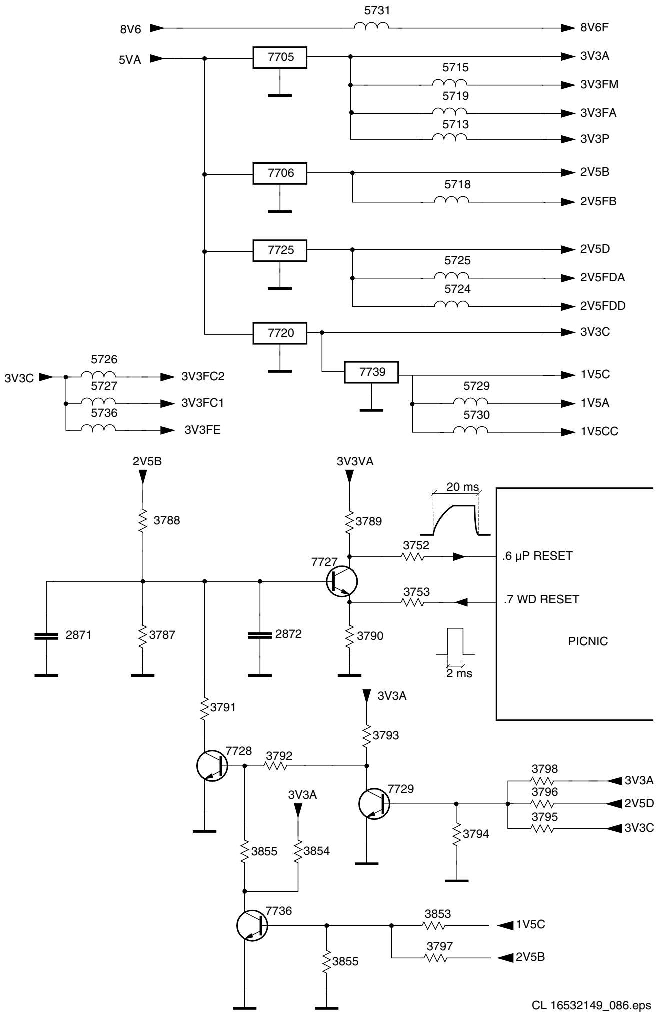
Both horizontal and vertical peaking is **amplitude dependent**: the higher the signal jump, the lower the peaking. This is done to avoid that high jumps get big 'ears', because this will introduce nasty contouring. To avoid peaking on noise levels, coring is used. The coring threshold is set via the Auto TV software, by means of the noise meter.
Therefore, the result is that **only details** are processed by the peaking.

The horizontal peaking is also **frequency dependent**: it is possible to perform peaking around three frequencies (when combined, it is even possible to peak at variable frequencies). In Auto TV, this feature is software coupled to the sharpness meter, in order to get the most optimal filter characteristic.
The vertical peaking works on a fixed frequency.

Colour Enhancements

In the FBX6 (as used in the MG3.1E), the TOPIC handled the colour enhancement features, such as: 'skin tone correction', 'blue stretch', and 'green enhancement'. In the new FBX7, all this is done by the Eagle IC.

Power Supply and POR


8V6
5731
8V6F
5VA
7705
3V3A
5715
3V3FM
5719
3V3FA
5713
3V3P
7706
2V5B
5718
2V5FB
7725
2V5D
5725
2V5FDA
5724
2V5FDD
7720
3V3C
7739
1V5C
5729
1V5A
5730
1V5CC
3V3C
5726
3V3FC2
5727
3V3FC1
5736
3V3FE
2V5B
3V3VA
3788
3789
20 ms
3752
.6 µP RESET
7727
3753
.7 WD RESET
2871
3787
2872
3790
PICNIC
2 ms
3791
3V3A
3793
7728
3792
3V3A
7729
3798
3V3A
3796
2V5D
3795
3V3C
3794
3855
3854
7736
3853
1V5C
3797
2V5B
3855

CL 16532149_086.eps
201201

Figure 9-7

Besides the two incoming voltages 8V6 and 5V2, also five voltage stabilisers are used to derive the necessary voltages. This is done for power consumption reasons.

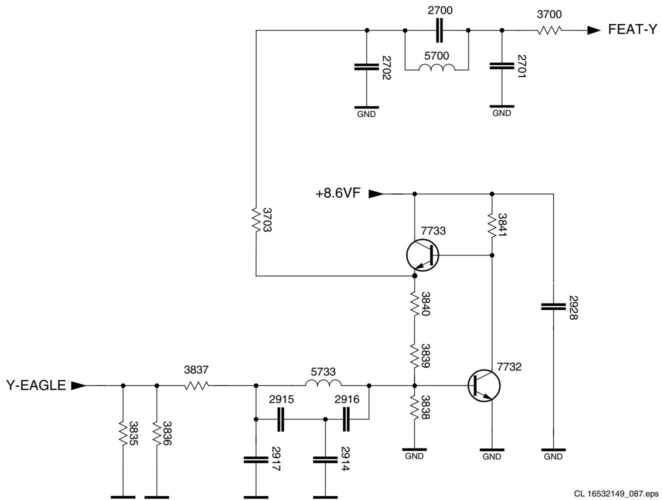
Via a reset circuit (TS7727) a reset pulse (POR) of 20 ms is generated for the µP inside the PICNIC and for the ROM. After 'power on', the 3V3 is built up (derived from the 5V2). Transistor TS7727 blocks and pin 6 of the PICNIC will follow the rising slope of the power supply. As soon as the power supply is stabilised, capacitor C2872 will charge (via R3788). When this voltage reaches 0.6 V (after 20 ms), TS7727 starts to conduct, and the voltage at pin 6 goes low again. The µP is reset now. If the PICNIC cannot communicate with the ROM, the 'watchdog' will generate a reset pulse (on pin 7), which will re-start the cycle again.

If one of the power supplies is absent (or too low), then a safety problem can occur in some cases (e.g. a too high temperature of the stabiliser). To prevent this from happening, the voltage dividers at the bases of the transistors TS7729 and TS7736, are calculated such that they will block when above described situations occurs. In this case, the base of TS7727 is kept 'low' by the conducting TS7728, until the problem is solved. The µP receives no POR pulse, and cannot be reset.

Output

The YUV signals presented to the HOP come from the Eagle. These three signals have all the same circuitry so it is explained once (for Y).

YUV Output Filter


2700
3700
FEAT-Y
2702
5700
2701
GND
GND
+8.6VF
3703
3841
7733
3840
2928
3839
7732
3837
5733
Y-EAGLE
2915
2916
3838
3835
3836
2917
2914
GND
GND
GND
GND
GND
GND
GND

CL 16532149_087.eps
131201

Figure 9-8

The YUV signals are first filtered by a 64 MHz passive filter (L5733 and C2914-2917). Because the output signals from the Eagle are too small to drive the HOP directly, they are amplified by the circuit around TS7732 and TS7733. The gain is determined by R3839, R3840, and R3837. For the Y-signal the gain is 2, for the U-signal it is 1.33, and for the V-signal it is 1.05.

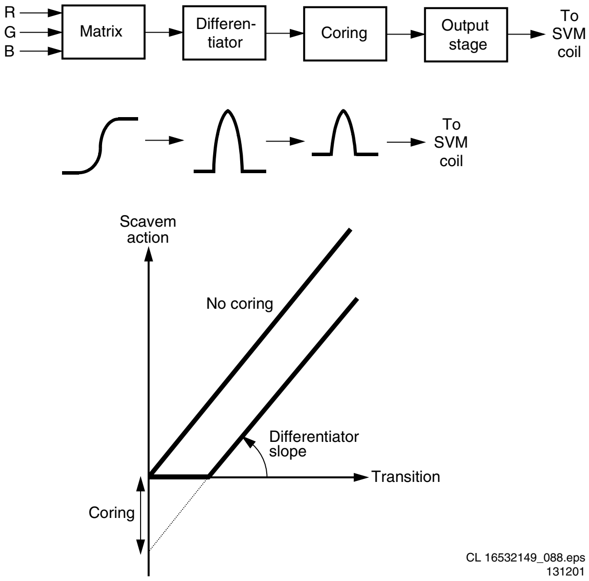
9.5 Auto Scavem

9.5.1 Introduction

To improve the sharpness, the Scan Velocity Modulation (Scavem) circuit modulates the deflection speed as a function of the picture contents. This feature uses a separate Scavem deflection coil.
Auto Scavem is introduced, to be able to display the high definition signal from the FBX7. As the Scavem circuit is now controlled by the Auto TV software, it is called Auto Scavem. The circuit, with the Scavem amplifier, is located on a separate PWB (in front of the SSP), and is connected to the picture tube panel.

9.5.2 Normal Scavem

Block diagram


R
G
B
Matrix
Differen-
tiator
Coring
Output
stage
To
SVM
coil
To
SVM
coil
Scavem
action
No coring
Differentiator
slope
Transition
Coring

CL 16532149_088.eps
131201

Figure 9-9

With normal Scavem (as used in the MG3.1E), the RGB signals are added together and differentiated before they drive the Scavem coil. The coring block prevents that Scavem processing is done on low signal levels.

9.5.3 Auto Scavem (Diagram SC)

Block diagram

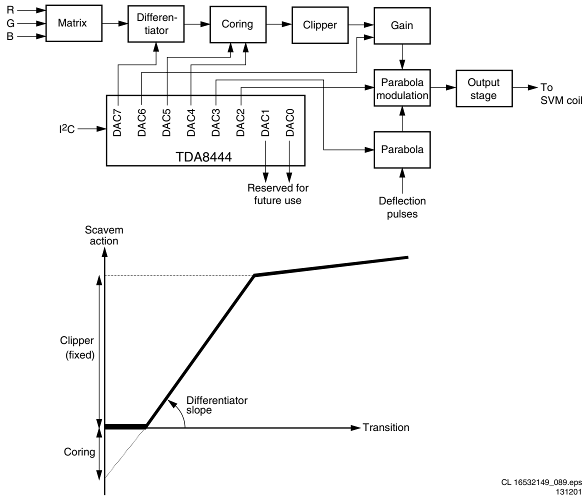

R
G
B
Matrix
Differen-tiator
Coring
Clipper
Gain
Parabola modulation
Output stage
To SVM coil
I2C
DAC7
DAC6
DAC5
DAC4
DAC3
DAC2
DAC1
DAC0
TDA8444
Reserved for future use
Parabola
Deflection pulses
Scavem action
Clipper (fixed)
Differentiator slope
Transition
Coring
CL 16532149_089.eps
131201

Figure 9-10

This new Auto Scavem circuit include some extra blocks:

- Clipper
- Parabola modulation

Auto Scavem is fully software controlled, by means of I^{2}C. The speed, at which Auto Scavem is adapted, is controlled by the Auto TV algorithm. This adaptation takes place together with the FBX initialisation, and takes about 1 second. The different circuit stages are controlled via a DAC (item 7500, TDA8444). The new Auto Scavem circuitry also produces higher Scavem currents, which results in sharper pictures. For the circuit description, we splitted the circuit in eight stages.

Matrix and Differentiator

Stage 1 and 2

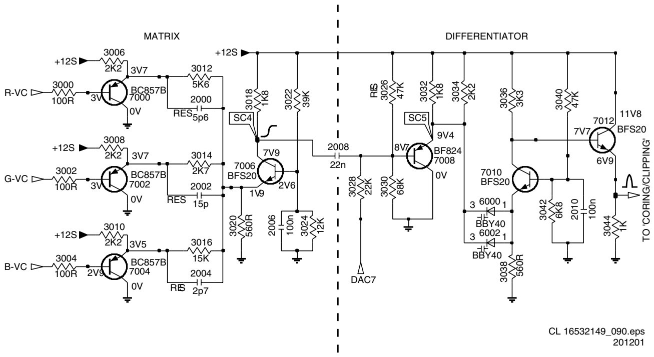

MATRIX
DIFFERENTIATOR
+12S
R-VC
G-VC
B-VC
7000 BC857B
7002 BC857B
7004 BC857B
7006 BFS20
7008 BF824
7010 BFS20
7012 BFS20
6000 BBY40
6002 BBY40
SC4
SC5
DAC7
TO 'CORING/CLIPPING'
CL 16532149_090.eps
201201

Figure 9-11

The RGB signals are added via transistors 7000, 7002 and 7004, on the emitter of transistor 7006. This is done via resistors 3012, 3014, and 3016, which have a different 'weight' factor. This, to regain the luminance signal.

The next circuit is the differentiator. The combined signal enters this circuit at the base of transistor 7008. The DC-level of this transistor is controlled by the DAC7 line, which is dependent of the 'sharpness meter' reading in the Auto TV algorithm. By means of this control signal, the voltage and capacity of varicap diode 6000 is altered, which will adapt the differentiator.

The slope of the differentiator is controlled by this DC-level. The differentiation itself is done by varicap diode 6000. Output signal goes from the collector of transistor 7010 via emitter follower (= buffer) 7012, to the next stage.

Coring/Clipping and Gain

Stage 3 and 4

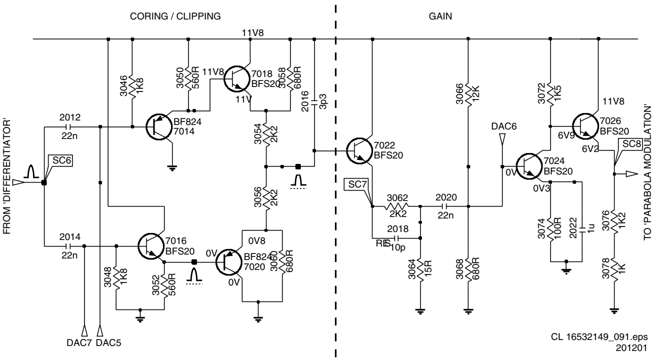

CORING / CLIPPING
GAIN
FROM 'DIFFERENTIATOR'
SC6
SC7
SC8
7014 BF824
7016 BFS20
7018 BFS20
7020 BF824
7022 BFS20
7024 BFS20
7026 BFS20
DAC6
DAC7 DAC5
TO 'PARABOLA MODULATION'
CL 16532149_091.eps
201201

Figure 9-12

The coring circuit (items 7014 and 7016) prevent Auto Scavem on the lowest signal levels (= noise), while the clipper circuit (items 7018 and 7020) always give the same amount of Scavem above a certain level.
The levels at which this must happen, are controlled by the DAC4 and DAC5 lines, and are dependent of the 'noise meter' reading in the Auto TV program.

The input signal enters this circuit at emitter follower 7022, and is strongly attenuated via voltage divider R3062 and R3064. This, because the gain of transistor 7024 is set with the adjustable voltage divider of R3066, R3068 and R3070. The level at which this happen, is controlled by the DAC6 line, and is dependent of the 'sharpness meter' reading in the Auto TV program, the picture tube size, and the sharpness setting by the customer.

Parabola Generation

Stage 5

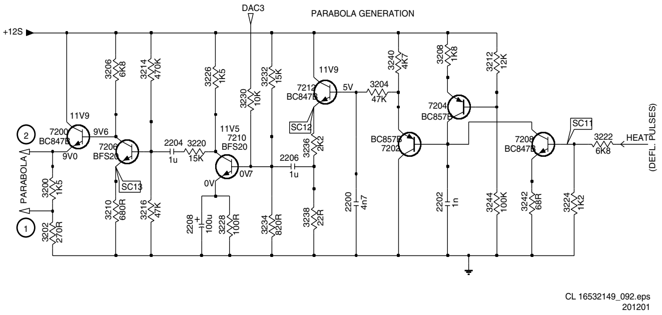

DAC3
PARABOLA GENERATION
+12S
PARABOLA
7200 BC847B
7206 BFS20
7210 BFS20
7212 BC847B
7204 BC857B
7202 BC857B
7208 BC847B
SC11
SC12
SC13
HEATER
(DEFL. PULSES)
CL 16532149_092.eps
201201

Figure 9-13

In addition, the Scavem signal is modulated with a parabola. This is necessary, because the picture tube is less sensitive for Scavem in the centre as on both sides.
On the CRT-panel, the 'heater' pulses are used to create a parabola on line frequency. This parabola is made with transistors 7204 and 7206. The DC-level of these transistors is controlled via the DAC3 line. In this way, you can control the parabola via software. The level is dependent of the 'sharpness meter' reading in the Auto TV program, the picture tube size, and the sharpness setting by the customer.

Parabola Modulation and Pre-amplifier

Stage 6 and 7

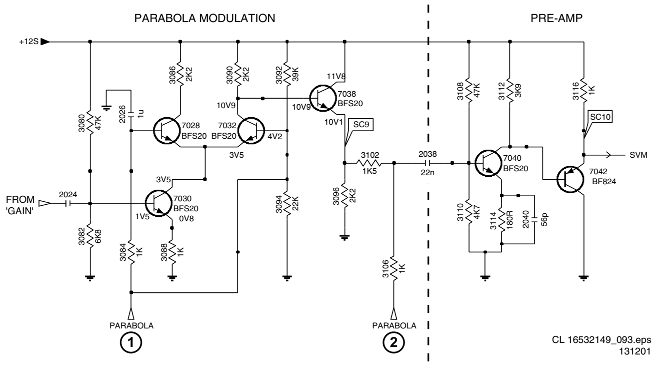

PARABOLA MODULATION
PRE-AMP
+12S
FROM 'GAIN'
2024
7028 BFS20
7032 BFS20
7030 BFS20
7038 BFS20
7040 BFS20
7042 BF824
SC9
SC10
SVM
3102 1K5
2038 22n
PARABOLA ①
PARABOLA ②
CL 16532149_093.eps
131201

Figure 9-14

The Scavem signal enters at the base of transistor 7030. Transistors 7028 and 7032 are complementary. Normally, the same current goes through both components, but because on one of them (7028) the parabola signal is offered, the Scavem signal is now modulated and inverted.
After buffer 7038, the parabola signal is again added to the (now inverted) signal, so that only the modulated signal is available on the input of the pre-amplifier (items 7040 and 7042).

Pre-amplification is done via a voltage amplifier (7040) and an emitter follower (7042).

Final Amplifier (Diagram F)

Stage 8

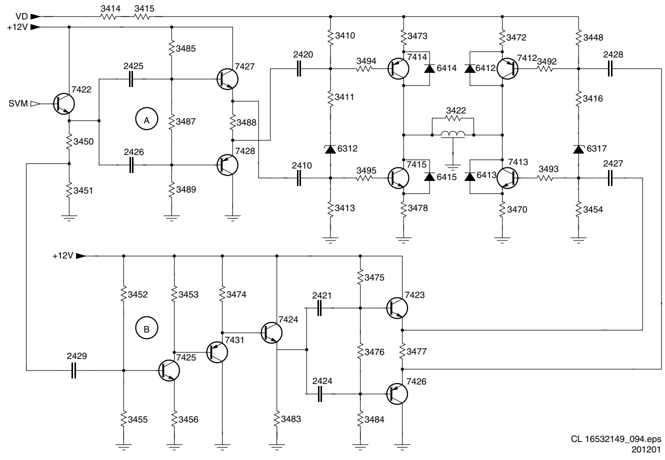

VD
+12V
SVM
7422
7427
7428
A
B
7414
7415
7412
7413
3422
7423
7424
7425
7426
7431
CL 16532149_094.eps
201201

Figure 9-15

Finally, the Auto Scavem signal arrives, via emitter follower 7422, at stage [A] on the CRT panel. Transistors 7427 and 7428, together with power transistors 7414 and 7415, form the power amplifier, which can deliver the high Scavem currents. From the emitter of 7422, a signal is taken for stage [B]. This signal is **inverted** by transistor 7425 and buffered by 7431 and 7424. The next stage is identical to that of stage [A].
At a positive alteration of the Scavem signal, transistors 7427 and 7415 in stage [A] will conduct, while 7428 and 7414 are blocked. In stage 'B', the positive pulse is inverted, so transistors 7426 and 7412 will conduct, while both 7423 and 7413 are blocked. The Scavem current will flow now, via transistor 7412, through the Scavem coil and then through 7415.
During negative alterations, the current will flow through transistor 7414, the Scavem coil, and transistor 7413.

9.6 Wireless Surround Amplifier (Diagram W)

This module is also used in the MG3.1E, but the circuit was not described yet.

9.6.1 Block Diagram

Wireless Surround Amplifier

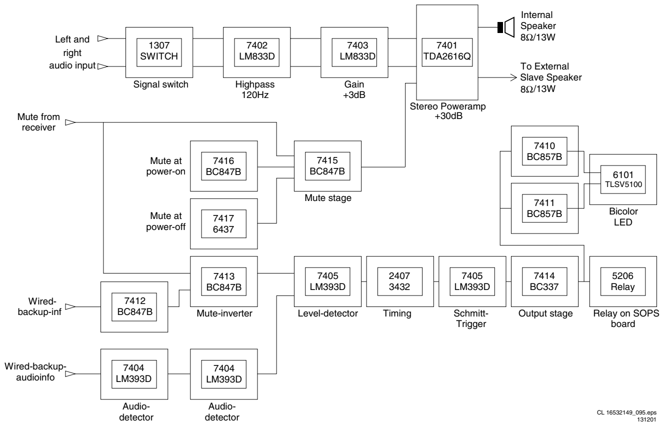

Left and right audio input
1307 SWITCH
Signal switch
7402 LM833D
Highpass 120Hz
7403 LM833D
Gain +3dB
7401 TDA2616Q
Stereo Poweramp +30dB
Internal Speaker 8Ω/13W
To External Slave Speaker 8Ω/13W
Mute from receiver
Mute at power-on
7416 BC847B
7415 BC847B
Mute stage
Mute at power-off
7417 6437
7410 BC857B
7411 BC857B
6101 TLSV5100
Bicolor LED
Wired-backup-inf
7412 BC847B
7413 BC847B
Mute-inverter
7405 LM393D
Level-detector
2407 3432
Timing
7405 LM393D
Schmitt-Trigger
7414 BC337
Output stage
5206 Relay
Relay on SOPS board
Wired-backup-audioinfo
7404 LM393D
Audio-detector
7404 LM393D
Audio-detector
CL 16532149_095.eps
131201

Figure 9-16

9.6.2 Amplifier (Diagram W1)

The used amplifier, TDA2616Q, is a stereo power amplifier with voltage gain of 30 dB. This power amp can deliver 2 x 12.5 W into 8 Ω load. Here the amplifier is used with a symmetrical power supply, therefore no output capacitors are necessary. To avoid oscillations, a so-called 'Boucherot network' (R3453-C2433, and R3452-C2434) is placed on both outputs.

The amplifier is powered by a symmetrical power supply. Main components are: the mains transformer, diodes 6407-6418, and capacitors 2404-2405. The measured ouput voltage varies between: +/- 14.5 and 19 V_{DC}. This depends of the delivered output power in both speakers (at nominal mains voltage).

IC7402 and all passive components around this part, form a high pass filter (-3 dB/120 Hz). This filter is implemented because the used box and speaker are not intended to reproduce low frequencies. A pre-amp, IC7403, gives an additional 3 dB gain to give the whole system the correct sensitivity.

The pre-amplifier and filter-part, work on a symmetrical power supply +/- 9 V_{DC}. These voltages are derived from the main supply with zenerdiodes 6401-6402, resistors 3401-3404, and capacitors 2402-2403

Mute
To ensure 'plop' free operation, some additional circuits are required. The power amp can be muted in three different ways by transistor 7415:

- **At 'power on'.** The circuit around 7416 gives a delayed at start-up, to allow the power supplies to become stable.
- **At 'power down'.** In normal operation, transistor 7417 is 'on', 7415 is 'off', and amplifier 7401 is enabled. At power down, the transistor 7417 is fast switched 'off', 7415 is 'on', and the amplifier is muted before the power supplies become instable. Diode 6437 gives an additional mute when the relay switches off.
- **Mute from the receiver.** When there are perturbations and interferences during the transmission, the mute output line of the receiver (connector 1401 - pin 1) becomes 'high' (4 V_{DC}), and turns 'on' transistor 7415. This will mute the output amplifier.

Timing

When the transmission of AC3 surround signals is ended (e.g. television 'off'), the mute line from the receiver becomes 'high' and mutes the amplifier via TS7415. At the same moment, the output of 7405 becomes 'low'. Now, capacitor 2407 starts discharging into R3432. When the voltage on the positive input of the comparator becomes lower then the voltage on the negative input, the output of the comparator turns from 'high' to 'low' and the relay is switched 'off' by 7414. The established time is 11 until 15 minutes (RC-time R3432/C2407). If the mute line turns 'low' during this discharge period, the capacitor 2407 is charged again and the complete timing is reset.

Wired Backup

When there is no possibility to use the **wireless** link (due to perturbations or interferences), it is possible to use a 'wired' backup solution. On the rear of the box is a backup input. By plugging in a cable with 3.5 mm stereo jack (order under nr. 3104 311 02251), the power supply for the receiver is interrupted. The audio signal enters the amplifier now via this backup input. An audio detector (7404) is added on the amplifier board, to obtain the same functionality when we use the wired backup.
The level detector (7405) is then triggered by the output of the audio detector, i.s.o. the mute line coming from the receiver.

LED control

TS7410 and 7411 control the red or green part of a bicolour LED, according to the voltage on the collector of TS7414.

9.6.3 Power Supply (Diagram W2)

The box can operate in two different modes: 'standby' and 'active' mode.

- In the standby mode all power is delivered by a so-called standby SOPS. This is a self-oscillating power supply, which can deliver 12 V_{DC} for the receiver board and the timing circuitry. The delivered current in the standby mode is rather low, mainly because the receiver board has a 'sleep' period of 3 seconds, and a 'listen' period of 0.2 s.
- In active mode (relay 'on'), the main transformer bypasses the standby supply, and all the needed power is now delivered by this transformer (via diodes 6405-6406 and capacitor 2401). This is done to reduce dissipation in standby mode.

SOPS standby supply: a stable output voltage of 12 V_{DC} is obtained by use of a low-drop voltage regulator L4940V12. The feedback is formed with components R3201, 3204, 3205, 3206, and an optocoupler.
At primary side, there is a rectifier part that produces 350 V_{DC} (items 6206 and 2207). The SOPS is formed by the FET 7207, transformer 5204, current-limiter 7206, 6205, and 6210, a control circuit (7204, 7205, and 6207) and an optocoupler (7203). The whole system works always in 'burst' mode. When a higher current is necessary, the burst period becomes larger, and the burst-repeat frequency increases. The SOPS can operate on mains voltages between 90 and 264V_{AC}.
When the output voltage rises above 20 V_{DC}, (e.g. caused by a fault in the feedback system of the SOPS), the circuit around thyristor 6211 short-circuits the SOPS output. This gives a reliable protection for the whole circuit.

9.7 Abbreviation List

16:9-ARFRONT	16:9 aspect ratio input from side I/O
50Hz/60Hz	50Hz/60Hz mains frequency
6-CHANNEL DAC	6- Channel DAC
ADC	Analogue to Digital Converter
AFC	Automatic Frequency Control
AGC	Automatic Gain Control
AM/FM	Amplitude Modulation/Frequency Modulation
AM-SOUND	Amplitude modulated sound signal
AUDIO_C	Audio Centre
AUDIO_L	Audio Left
AUDIO_R	Audio Right
AUDIO_SL	Audio Surround Left
AUDIO_SW	Audio Subwoofer
AUDIO-L-PROC	Audio Left Processed
AUDIO-R-PROC	Audio Right Processed
AUDIO-SR	Audio Surround Right
AUX-SUPPLY	Auxiliary supply
BC-PROT	Beam Current Protection
BG	System B and G
BLC-INFO	Black Current Information
B-SC1-IN	Blue SCART1 in
B-SC2-IN	Blue SCART2 in
B-TXT	Blue teletext
B-vc	Blue from video-controller
C	Centre
C/16/9	Chrominance input
C-7-OUT	Chrominance on pin 7 SCART (variant)
CENTER	Centre speaker
C-FRONT	Chrominance front input
CL_DS_L	Constant Level Dual Screen Left
CL_DS_R	Constant Level Dual Screen Right
CL_L	Constant Level Left
CL_L_OUT	Constant Level Left out
CL_R	Constant Level Right
CL-R-OUT	Constant Level Right out
CODEC	Coding/Decoding
COMP	Compander ON/OFF
ComPair	Computer aided rePair
CORDL_L	Cordless Left
CORDL_R	Cordless Right
CORE TOP LEVEL	Core Top Level
CRT	Cathode ray tube
CSM	Customer Service Mode
C-UI	Chrominance UI
CVBS	Composite Video Blanking and Synchronisation
CVBS_Y-UI	CVBS Y UI
CVBS-PIP-DS	CVBS Picture In Picture dual Screen
CVBS-SC1-IN	CVBS SCART1 in
CVBS-SC2 OUT	CVBS SCART2 out
CVBS-SC2-IN	CVBS SCART2 in
CVBS-SC3-IN	CVBS SCART3 in
CVBS-SC4-IN	CVBS SCART4 IN
CVBS-TER	CVBS terrestrial
CVBS-TXT-DS-OUT	CBVBS Teletext Dual Screen out
CVBS-TXT-OUT	CVBS Teletext out
CVBS-Y-FRONT	CVBS Luminance front input
D/K	Monochrome TV system. Sound carrier distance is 6.5 MHz
DAC	Digital Analogue Converter
DAC-HOP	Digital Analogue Converter HOP IC
DC_PROT/ AUDIO_SR	DC protection (for supply)
DC-filament	Filament supply voltage
DC-PROT	DC protection
DETECT	Detect signal side I/O input
DFU	Directions For Use: description for the end user
DIG_IN1	Digital In 1
DIG_IN2	Digital In 2

DIGITAL I/O	Digital In/Out
DIG-OUT	Digital Out
DNR	Dynamic Noise Reduction
DS-AUDIO-L	Dual Sound Audio Left
DS-AUDIO-R	Dual Sound Audio Right
DSP	Digital Signal Processing
DST	Dealer Service Tool
DUET	SAA2505H DUET IC
DVD	Digital Versatile Disc
DYN-FASE-COR	Dynamic phase correction
EHT-INFO	Extra High Tension information
EPG	Electronic Programme Guide (= NexTView)
EW-DRIVE	East-West drive signal
FALCONIC	Field And Line rate CONvertor IC
FBCSO	Fixed Beam Current Switch Off
FBL-DS-OUT	Fast Blanking Dual Screen out
FBL-FDS	Fast Blanking Full Dual Screen
FBL-PIP	Fast Blanking PIP
FBL-SC1-IN	Fast Blanking signal for SCART1 in
FBL-SC2-IN	Fast Blanking signal for SCART2 in
FBL-TXT	Fast Blanking Teletext
FDSL-OUT	Full Dual Screen - Left out
FDSR-OUT	Full Dual Screen - Right out
FEAT-U	U from Feature Box
FEAT-V	V from Feature Box
FEAT-Y	Y from Feature Box
FILAMENT	Filament of CRT
FILAMENT-PROT	Filament protection
FLASH	Flash memory
FM SOUND	Frequency Modulation Sound
FRAME ROTATION	Frame rotation
FRAME-ROT +	Frame rotation +
FRONT-C	Front input chrominance (SVHS)
FRONT-DETECT	Front input detection
FRONT-Y_CVBS	Front input luminance or CVBS (SVHS)
GHOST-IN	Signal Ghost cancellation in
G-SC1-IN	Green SCART1 in
G-SC2-IN	Green SCART2 in
G-TXT	Green Teletext
G-vc	Green from video-controller
HA	Horizontal Acquisition
HA1	Horizontal Sync (diversity)
HA-D	Horizontal Sync from HIP-IC to FDS
HD	Horizontal drive coming from PICNIC
Hdefl-1in	Horizontal deflection signal needed for DC-shift circuitry
Hdefl-lin	Horizontal deflection linearity
HEATER	Heater (Filament)
HFB	Horizontal flyback
HFB+13V	Non-rectified output 13V-winding LOT
HFB-D	Horizontal Fly Back to FDS
HIP	High-end Input Processor
HOP	High-end Output Processor
HOSD PIP	Horizontal OSD PIP
HP	Headphone
HS-DS	Main, Horizontal sync input POPOV IC
I2C	Integrated IC bus
I2S	Integrated IC Sound bus
I2S-CL	I2S bus clock
I2S-DSP-IN	I2S digital signal processor in
I2S-DSP-OUT	I2S digital signal processor out
I2S-DSP-OUT1	Serial-DSP-bus-out1
I2S-WS	I2S bus Word Stroke
IF	Intermediate Frequency
IN-C_IN-R-SC2	Either Chrominance-in SCART2 or Red-in SCART pin 15
IN-FRONT-SNDL	Sound Left front in
IN-FRONT-SNDR	Sound Right front in
IN-SC1-B	In SCART1 Blue
IN-SC1-G	In SCART1 Green
IN-SC1-R	In SCART1 Red
IN-SC1-SNDL	In SCART1 Sound Left
IN-SC1-SNDR	In SCART1 Sound Right

IN-SC2-B	In SCART2 Blue
IN-SC2-CVBS_Y	In SCART2 CVBS or Luminance (SVHS)
IN-SC2-FBL	In SCART2 Fast BLanking
IN-SC2-G	In SCART2 Green
IN-UI-B	B input from UI
IN-UI-FBL	Fast Blanking input from UI
IN-UI-G	G input from UI
IN-UI-R	R input from UI
IO-BUS	In/Out bus
IR-LED	Drive signal for the Service Infra Red LED
IRQ	Interrupt ReQuest
KEYBOARD	Top Control
L	Left Audio
L/L'	Monochrome TV system. Sound carrier distance is 6.5 MHz. L' is Band I, L' are all other Bands
LDP	Line Deflection Protection
LED	Light Emitting Diode
LEFT	Left
LEFT_DOWNMIX	LEFT Down mix
LEFT_IN	Left In
LEFT_OUT	Left out
LF	Left output
LIGHT SENSOR	Light sensor
LINE-DRIVE	Line drive signal
LMN	System L, M, N
LNA	Low Noise Adapter
LS CORRECTION	Picture with corrections
LSP	Large Signal Panel
LV-	Frame coil sink signal to the N/S correction circuitry
LV+	Frame coil drive signal from the frame output stage
MCADEC_RESET	Reset signal (Master reset)
MCS-MPEG	Multi channel sound - MPEG
MSP-CLOCK	Clock signal Multi-standard Sound Processor
MUP	Micro Processor
MUTE	Mute line
M/N	Monochrome TV system. Sound carrier distance is 4.5 MHz
N52502	CAD-naming referring to other sub-schedule
NC	Not Connected
NTSC	National Television Standard Committee. Colour system mainly used in the USA and Japan. Colour carrier is at 3.579545 MHz
NVM	Non Volatile Memory
O/C	Open Circuit
ON/OFF LED	On/Off control signal for the LED
OSD	On Screen Display
OTC	OSD, Teletext, and Controller
OUT-1	Y-output POPOV IC
OUT-2	V-output POPOV IC
OUT-3	U-output POPOV IC
OVERRULE-TXT	Overrule Teletext
P2-5	For MG3.1E, status 4 (SCART 4)
P2-6	For MG3.1E, status 3 (SCART 3)
P2-7	In MG3.1E, RGB 1FH/Front UI
P50_OUT	Easy link (= Project 50) data line from SCART2
PAL	Phase Alternating Line. Colour system mainly used in West Europe (colour carrier = 4.433619 MHz) and South America (colour carrier PAL M = 3.575612 MHz and PAL N = 3.582056 MHz)
PCB	Printed Circuit Board
PD	Power Down
PICNIC	Picture Improved Combined Network IC
PILOT	Pilot Signal

PILOTMUTE	Pilot Mute signal
PIP	Picture In Picture
PIP-B	Picture In picture Blue
PIP-FBL	PIP Fast Blanking
PIP-G	Picture In Picture Green
PIP-R	Picture In Picture Red
PLL	Phase Locked Loop. Used for e.g. FST tuning systems.
POPOV	Double Window/PIP IC
POR	Power On Reset, signal to reset the uP
POWER-DOWN MUTE	Power Down Mute
POWER-ON MUTE	Power On Mute
R	Right Audio
RAM	Random Access Memory
RC5	RC5 signal from the remote control
RESET	Reset signal
RESET-AUDIO	Reset signal for Audio IC MSP3410
RESET-AUDIO-INV	Inverted Reset signal for Audio IC MSP3410
RESET-FLASH	Reset signal flash memory
RF	Right output (no companding)
RGB	Red Green Blue colour signals
RIGHT	Right
RIGHT_DOWNMIX	Right Down mix
RIGHT_IN	Right In
RIGHT_OUT	Right out
ROM	Read Only Memory
R-SC1-IN	Red SCART1 in
R-TXT	Red Teletext
R-vc	Red from video-controller
S/C	Short Circuit
SAM	Service Alignment Mode
SC2-B-IN	SCART2 Blue in
SC2-C-IN	SCART2 Chrominance in
SC2FH_IFH	Sand-castle 1fH/2fH
SC2-G-IN	SCART2 Green in
SC2-R-IN C-IN	Red in SCART2 or Chrominance in
SCART	Syndicat des Constructeurs d'Appareils Radiorecepteurs et Televisieurs
Scavem	Scan Velocity Modulation
SCAVEM-SW	Scavem- switch
SCL	Serial clock line of the I2C bus
SCL-F	Clock line of the I2C-bus fast (for TXT)
SCL-S	Clock line of the I2C-bus slow
SDA	Serial Data line of the I2C bus
SDA-F	Data line of the I2C-bus fast (for TXT)
SDA-S	Data line of the I2C-bus slow
SDM	Service Default Mode
SECAM	Sequence Couleur Avec Memoire. Colour system mainly used in France and East Europe. Colour carriers are 4.406250 MHz and 4.250000 MHz
SEL_SOFAC_0	Selection-signal for SOFAC 0
SEL_SOFAC_1	Selection-signal for SOFAC 1
SEL_TO-MCS_LR	Selection switch MCS Left Right
SELECT TO EXT2	Selection of Extern 2 input
SELECT_TO_CORDL_1	Selection signal for Cordless 1
SELECT_TO_MCS_CINCH_0	Selection signal for MCS Cinch 0
SELECT_TO_MCS_CINCH_1	Selection signal for MCS Cinch 1
SELECT-AUDIO CINCH1	Selection of audio via cinch input 1
SELECT-AUDIO-CINCH2	Selection of audio via cinch input 2
SELECT-AUDIO-LR	Selection of Audio Left and Right
SELECT-TO_CORDL_0	Selection signal for Cordless 0
SERVICE-DEFAULT	Service pin to activate SDM
SERVICE-MODE	Service pin to activate SAM
SIF	Sound Intermediate Frequency
SIFM	Sound Intermediate Frequency Mono

SL	Surround Left
SL-ST	Sliding stereo of the Stereo Demodulator IC TDA1578A
SNDL-CL-VL-OUT	Sound Left constant level, variable level out
SNDL-FRONT-IN	Sound Left front in
SNDL-HEADPH-OUT	Sound Left headphone out
SNDL-SC1-IN	Sound L SCART1 in
SNDL-SC1-OUT	Sound Left SCART1 out
SNDL-SC2-IN	Sound Left SCART2 in
SNDL-SC2-OUT	Sound Left SCART2 out
SNDL-SC3-IN	Sound Left SCART3 in
SNDL-SC4-IN	Sound Left SCART4 in
SNDL-UI-IN	Sound Left UI IN
SNDR-CL-VL-OUT	Sound Right constant level, variable level out
SNDR-FRONT-IN	Sound Right front in
SNDR-HEADPH-OUT	Sound Right headphone out
SNDR-SC1-IN	Sound Right SCART1 in
SNDR-SC1-OUT	Sound Right SCART1 out
SNDR-SC2-IN	Sound Right SCART2 in
SNDR-SC2-OUT	Sound Right SCART2 out
SNDR-SC3-IN	Sound Right SCART3 in
SNDR-SC4-IN	Sound Right SCART4 in
SNDS-CL-VL-OUT	Sound surround constant level, variable level out
SNDS-VL-OUT	Surround sound Left variable level out
SNDS-VR-OUT	Surround sound Right variable level out
SOFAC	Sound and Fading Control
SOUND L-HEADPHONE-OUT	Sound Left headphone out
SOUND R-HEADPHONE-OUT	Sound Right headphone out
SOUND-ENABLE	Sound Enable
SOUND-SELECT	Sound signal Selection
SOPS	Self Oscillating Power Supply
SPDIF	Sony Philips Digital Interface Format
SPDIF_IN1	SPDIF In 1
SPDIF_IN2	SPDIF In 2
SS LEFT	Surround Left
SS RIGHT	Surround Right
SSP	Small Signal Panel
STANDARD-FM-1	Standard Frequency Modulation 1
STANDARD-FM-2	Standard Frequency Modulation 2
STANDBY	Standby
STATUS1/2/3	Status signal from Euro-connector 1, 2, or 3 to the P (1.29 - 3.31 V is 16:9 signal, 3.32 - 5 V is 4:3 signal)
STBY	Standby
STEREO	Stereo
SUBCAR	Sub Carrier
SUB-H	Horizontal Sync Sub-TV-Program (via FDS)
SUB-V	Vertical Sync Sub-TV-Program (via FDS)
SUBWOOFER	Subwoofer speaker
SURROUND-LEFT	Surround Left
SURROUND-RIGHT	Surround Right
SW	Subwoofer
SYNC-SELECT	Synchronisation selection
TOPIC	The Outmost Picture Improvement IC
TRIG	Triggering
TUNED	Tuned-flag coming from the IF-IC TDA1597
UB-DEC	U-input for FDS
U-DEC	U-dec (input signal for PICNIC)
U-DS-1FH	U Dual Screen 1 x Horizontal Frequency
U-DS-2FH	U Dual Sound 2 x Horizontal Frequency
U-DS-OUT	U Dual Screen out
UF-DEC	U-MAIN input POPOV IC

U-FEAT	U-feature-box (output signal from PICNIC)
UF-SUB	U-SUB input POPOV IC
UI	Universal Interface
U-OUT	U-signal to HOP IC
U-SUB	U-output of HIP-IC on FDS
VA	Vertical Acquisition
VA1	Vertical Sync (diversity)
VB-DEC	V input for FDS
VD	Vertical Drive coming from PICNIC
VD-D	Vertical sync to FDS
V-DEC	V-dec (input signal for PICNIC)
VDEFL-1	Vertical deflection connection 1
VDEFL-2	Vertical deflection connection 2
VDNEG	Negative vertical drive signal
VDPOS	Positive vertical drive signal
+VD-switched	Only for VGA sets (VD switched i.s.o. V_bat).
V-DS-1FH	V Dual Screen 1 x Horizontal Frequency
V-DS-2FH	V Dual Screen 2 x Horizontal Frequency
V-DS-OUT	V Dual Screen out
VFB	Vertical Flyback Pulse
VF-DEC	V-MAIN input POPOV IC
V-FEAT	V-Feature box (output signal from PICNIC)
VF-SUB	V-SUB input POPOV IC
VGA-B	VGA Blue
VGA-FBL	VGA Fast-blanking
VGA-G	VGA Green
VGA-R	VGA Red
VL_L	Variable level Left
VL_R	Variable level Right
VL_SL	Variable level Surround Left
VL_SR	Variable level Surround Right
VL_SW	Variable Level Sub-Woofer
VL_SW_DBE	Variable Level Subwoofer Dynamic Bass Enhancement
VLL_C	Variable level Centre
V-OUT	V-signal to HOP-IC
VOUT_C	V-out Centre
VOUT_L	V-out Left
VOUT_R	V-out Right
VOUT_SL	V-out Surround Left
VOUT_SR	V-out Surround Right
VOUT-SW	V-out Subwoofer
VREG	Opto-coupler feedback signal
VS-DS	Main, vertical sync input POPOV IC
V-SUB	V-output of HIP-IC on FDS
WIRED BACKUP-INFO	Wired back up information
WIRED-BACKUP AUDIO INFO	Audio signal (surround)
WIRELESS SURROUND RECEIVER	Wireless Surround receiver
WIRELESS TRANSMITTER	Wireless Transmitter
X-RAY-PROT	X-Ray Protection
X-tal	Quartz crystal
Y/C	Luminance (Y) / Chrominance (C) signal
Y_CVBS-SC2-IN	Luminance or CVBS SCART2 in
YB-DEC	Y input for FDS
Y-DEC	Luminance-dec (input signal for PICNIC)
Y-DS-1FH	Y Dual Screen 1 x Horizontal Frequency
Y-DS-2FH	Y-Dual Screen 2 x Horizontal Frequency
Y-DS-OUT	Y Dual Screen out
YF-DEC	Y-Main input POPOV IC
Y-FEAT	Luminance Feature box (output signal from PICNIC)
YF-SUB	Y-SUB input POPOV IC
Y-OUT	Luminance-signal to HOP-IC
Y-SUB	Y-output of HIP-IC on FDS
YUV	Component video
YUV-SELECT-2FH	YUV selection 2 x Horizontal Frequency
uP	Micro Processor

9.8 IC Data Sheets

In this paragraph, the internal block diagrams and pinning are given of ICs that are drawn as a 'black box' in the electrical diagrams (with the exception of 'memory' and 'logic' ICs).

9.8.1 Diagram B, TNY256 (IC7103)

Internal Block Diagram and Pinning

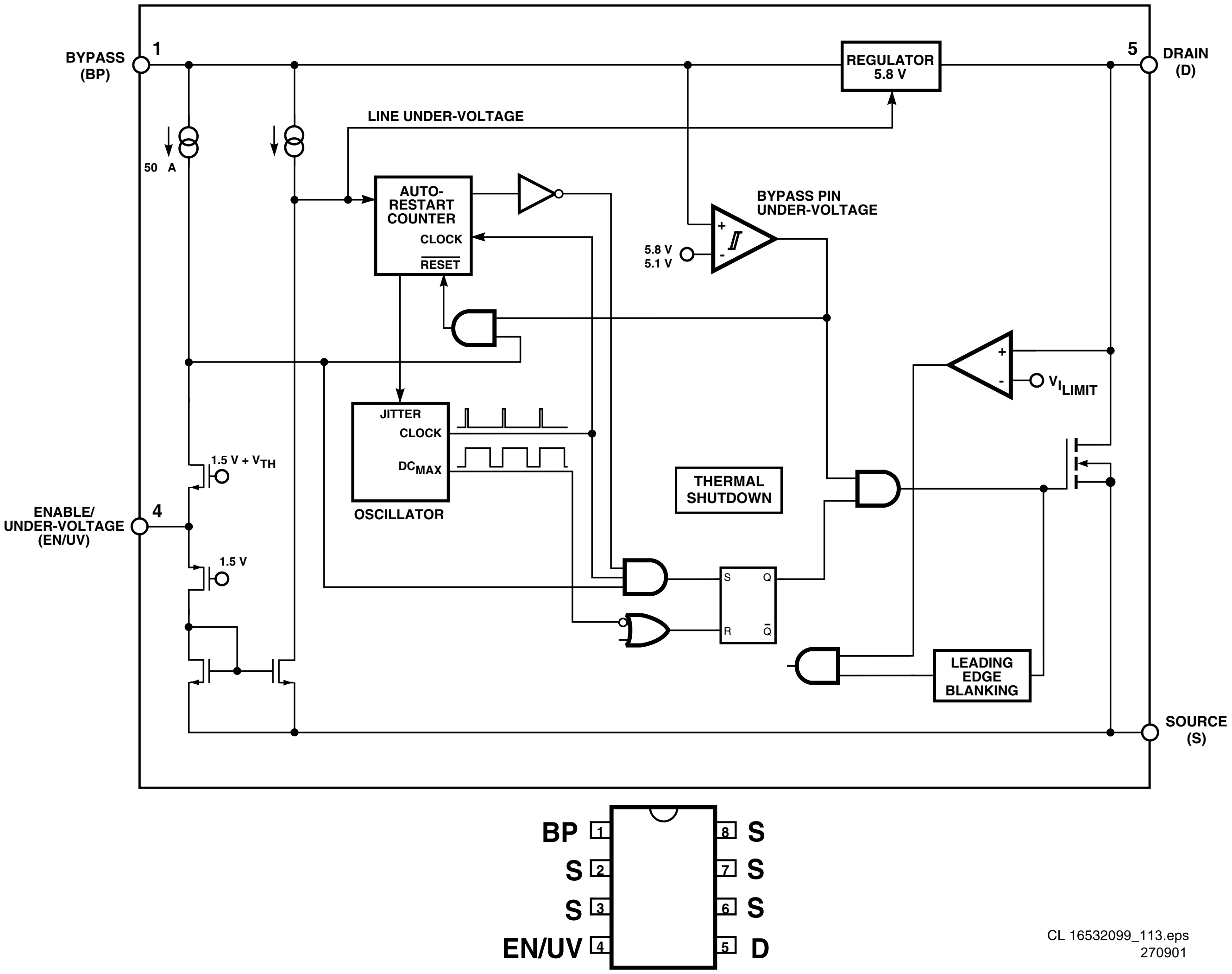

BYPASS (BP)
1
50 A
LINE UNDER-VOLTAGE
REGULATOR 5.8 V
5
DRAIN (D)
AUTO-RESTART COUNTER
CLOCK
RESET
BYPASS PIN UNDER-VOLTAGE
5.8 V
5.1 V
+
-
VILIMIT
JITTER
CLOCK
DCMAX
OSCILLATOR
1.5 V + VTH
ENABLE/ UNDER-VOLTAGE (EN/UV)
4
1.5 V
THERMAL SHUTDOWN
S
Q
R
Q̄
LEADING EDGE BLANKING
SOURCE (S)
BP 1
S 2
S 3
EN/UV 4
8 S
7 S
6 S
5 D

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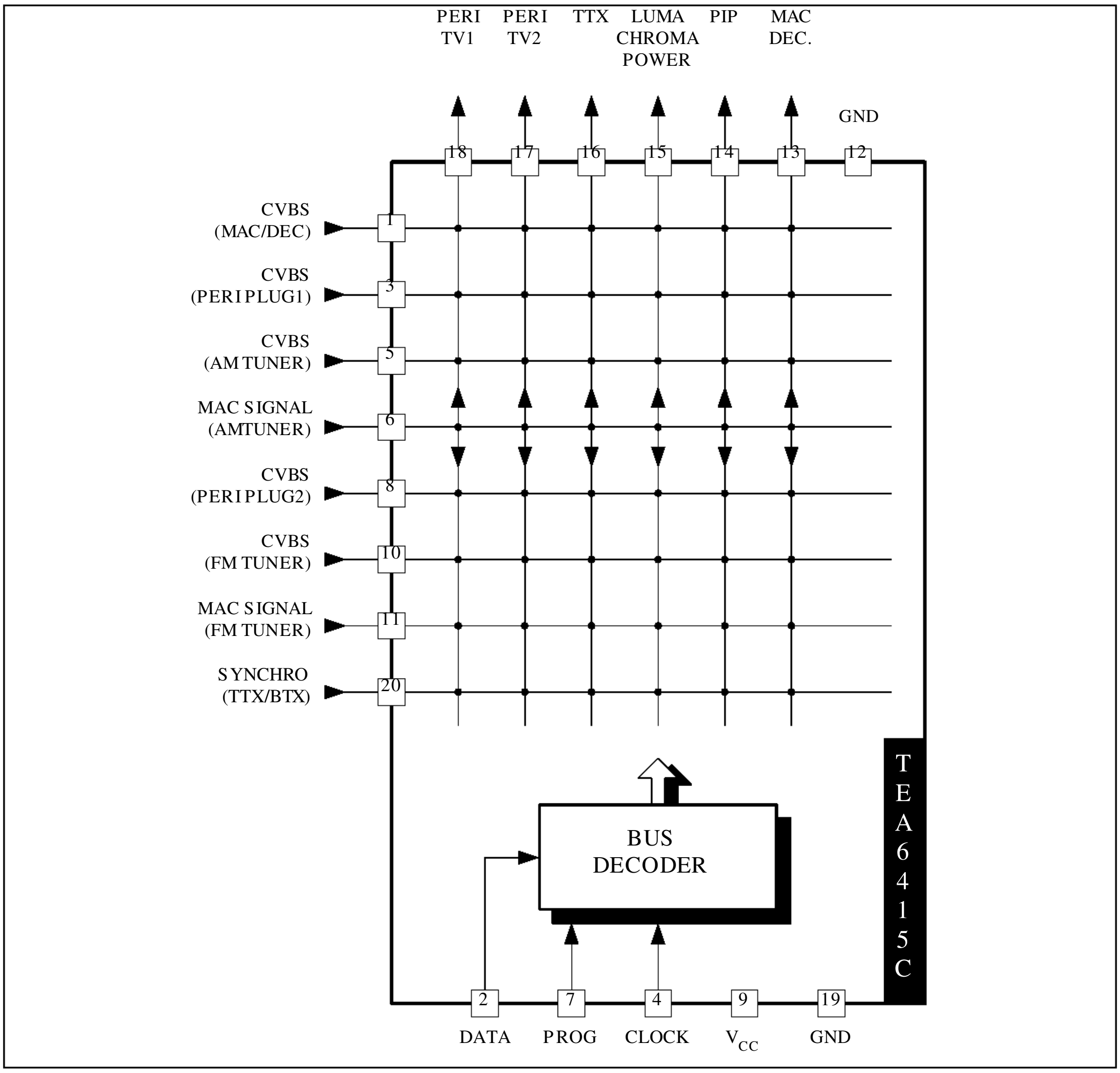
Figure 9-17

9.8.2 Diagram K8, TEA6415 (IC7208)

Internal Block Diagram and Pinning

TEA6415C

BLOCK DIAGRAM


PERI TV1
PERI TV2
TTX
LUMA CHROMA POWER
PIP
MAC DEC.
GND
18
17
16
15
14
13
12
CVBS (MAC/DEC)
1
CVBS (PERI PLUG1)
3
CVBS (AM TUNER)
5
MAC SIGNAL (AMTUNER)
6
CVBS (PERI PLUG2)
8
CVBS (FM TUNER)
10
MAC SIGNAL (FM TUNER)
11
SYNCHRO (TTX/BTX)
20
BUS DECODER
TEA6415C
2
7
4
9
19
DATA
PROG
CLOCK
V_{CC}
GND

PIN CONNECTIONS

INPUT	1	20	INPUT
DATA	2	19	GROUND
INPUT	3	18	OUTPUT
CLOCK	4	17	OUTPUT
INPUT	5	16	OUTPUT
INPUT	6	15	OUTPUT
PROG	7	14	OUTPUT
INPUT	8	13	OUTPUT
V_{CC}	9	12	GROUND
INPUT	10	11	INPUT

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201201

Figure 9-18

9.8.3 Diagram L2, T8F24EF (IC7724)

Internal Block Diagram and Pinning

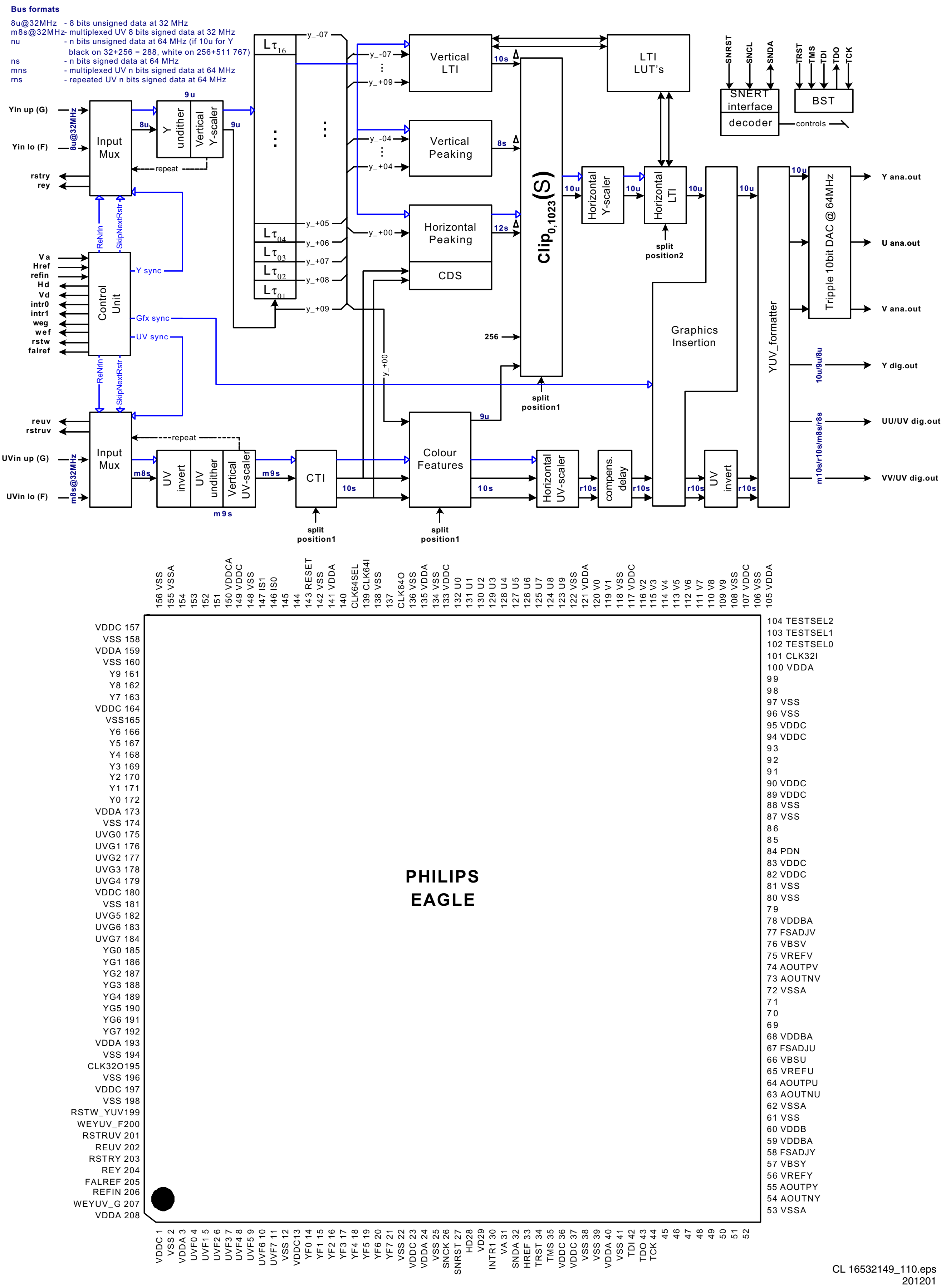
Bus formats
8u@32MHz - 8 bits unsigned data at 32 MHz
m8s@32MHz- multiplexed UV 8 bits signed data at 32 MHz
nu - n bits unsigned data at 64 MHz (if 10u for Y black on 32+256 = 288, white on 256+511 767)
ns - n bits signed data at 64 MHz
mns - multiplexed UV n bits signed data at 64 MHz
rns - repeated UV n bits signed data at 64 MHz
Yin up (G)
Yin lo (F)
8u@32MHz
Input Mux
8u
9 u
Y undither
Vertical Y-scaler
9u
repeat
rstry
rey
ReNrln
SkipNextRstr
Va
Href
refin
Hd
Vd
intr0
intr1
weg
wef
rstw
falref
Control Unit
Y sync
Gfx sync
UV sync
reuv
rstruv
UVin up (G)
UVin lo (F)
m8s@32MHz
m8s
UV invert
UV undither
Vertical UV-scaler
m9s
m9s
CTI
10s
split position1
Colour Features
split position1
10s
9u
Lτ16
Lτ04
Lτ03
Lτ02
Lτ01
y_-07
y_-07
y_+09
y_-04
y_+04
y_+05
y_+06
y_+07
y_+08
y_+09
y_+00
y_+00
Vertical LTI
Vertical Peaking
Horizontal Peaking
CDS
10s
8s
12s
Δ
Clip0,1023(S)
256
split position1
LTI LUT's
Horizontal Y-scaler
Horizontal LTI
10u
10u
10u
10u
10u
split position2
Graphics Insertion
Horizontal UV-scaler
r10s
compens. delay
r10s
UV invert
r10s
r10s
YUV_formatter
SNRST
SNCL
SNDA
SNERT interface
decoder
TRST
TMS
TDI
TDO
TCK
BST
controls
Tripple 10bit DAC @ 64MHz
Y ana.out
U ana.out
V ana.out
10u/9u/8u
Y dig.out
m10s/r10s/m8s/r8s
UU/UV dig.out
VV/UV dig.out
156 VSS
155 VSSA
154
153
152
151
150 VDDCA
149 VDDC
148 VSS
147 IS1
146 IS0
145
144
143 RESET
142 VSS
141 VDDA
140
CLK64SEL
139 CLK64I
138 VSS
137
CLK64O
136 VSS
135 VDDA
134 VSS
133 VDDC
132 U0
131 U1
130 U2
129 U3
128 U4
127 U5
126 U6
125 U7
124 U8
123 U9
122 VSS
121 VDDA
120 V0
119 V1
118 VSS
117 VDDC
116 V2
115 V3
114 V4
113 V5
112 V6
111 V7
110 V8
109 V9
108 VSS
107 VDDC
106 VSS
105 VDDA
VDDC 157
VSS 158
VDDA 159
VSS 160
Y9 161
Y8 162
Y7 163
VDDC 164
VSS165
Y6 166
Y5 167
Y4 168
Y3 169
Y2 170
Y1 171
Y0 172
VDDA 173
VSS 174
UVG0 175
UVG1 176
UVG2 177
UVG3 178
UVG4 179
VDDC 180
VSS 181
UVG5 182
UVG6 183
UVG7 184
YG0 185
YG1 186
YG2 187
YG3 188
YG4 189
YG5 190
YG6 191
YG7 192
VDDA 193
VSS 194
CLK32O195
VSS 196
VDDC 197
VSS 198
RSTW_YUV199
WEYUV_F200
RSTRUV 201
REUV 202
RSTRY 203
REY 204
FALREF 205
REFIN 206
WEYUV_G 207
VDDA 208
PHILIPS EAGLE
104 TESTSEL2
103 TESTSEL1
102 TESTSEL0
101 CLK32I
100 VDDA
99
98
97 VSS
96 VSS
95 VDDC
94 VDDC
93
92
91
90 VDDC
89 VDDC
88 VSS
87 VSS
86
85
84 PDN
83 VDDC
82 VDDC
81 VSS
80 VSS
79
78 VDDBA
77 FSADJV
76 VBSV
75 VREFV
74 AOUTPV
73 AOUTNV
72 VSSA
71
70
69
68 VDDBA
67 FSADJU
66 VBSU
65 VREFU
64 AOUTPU
63 AOUTNU
62 VSSA
61 VSS
60 VDDB
59 VDDBA
58 FSADJY
57 VBSY
56 VREFY
55 AOUTPY
54 AOUTNY
53 VSSA
VDDC 1
VSS 2
VDDA 3
UVF0 4
UVF1 5
UVF2 6
UVF3 7
UVF4 8
UVF5 9
UVF6 10
UVF7 11
VSS 12
VDDC13
YF0 14
YF1 15
YF2 16
YF3 17
YF4 18
YF5 19
YF6 20
YF7 21
VSS 22
VDDC 23
VDDA 24
VSS 25
SNCK 26
SNRST 27
HD28
VD29
INTR1 30
VA 31
SNDA 32
HREF 33
TRST 34
TMS 35
VDDC 36
VDDC 37
VSS 38
VSS 39
VDDA 40
VSS 41
TDI 42
TDO 43
TCK 44
45
46
47
48
49
50
51
52

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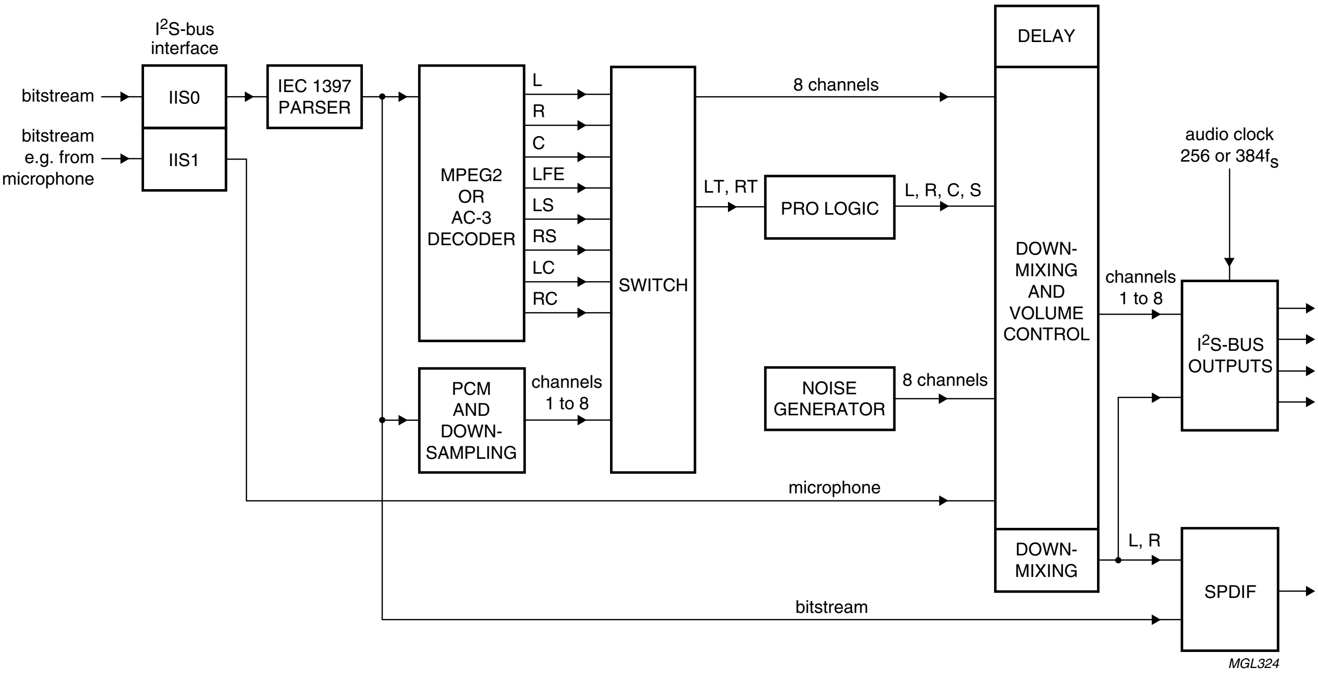
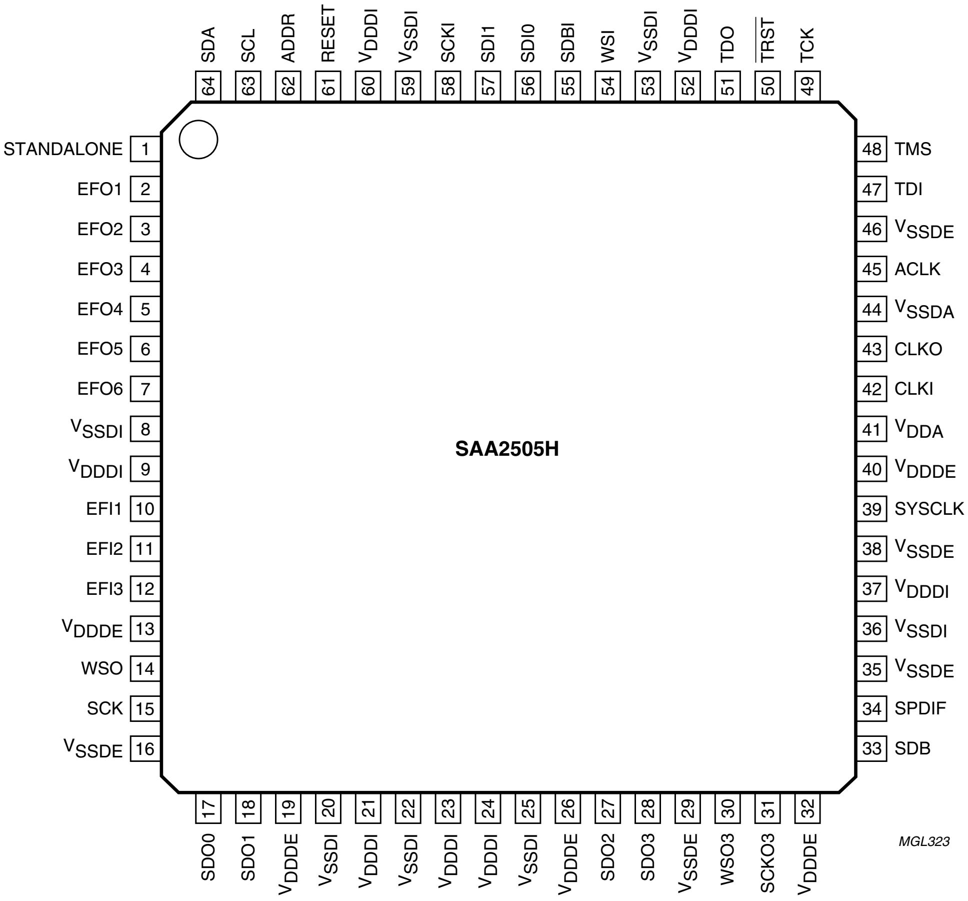
Figure 9-19

9.8.4 Diagram N1, SAA2505 (IC7801)

Internal Block Diagram and Pinning


I²S-bus interface
bitstream
IIS0
bitstream e.g. from microphone
IIS1
IEC 1397 PARSER
MPEG2 OR AC-3 DECODER
L
R
C
LFE
LS
RS
LC
RC
PCM AND DOWN-SAMPLING
channels 1 to 8
SWITCH
8 channels
LT, RT
PRO LOGIC
L, R, C, S
NOISE GENERATOR
8 channels
microphone
bitstream
DELAY
DOWN-MIXING AND VOLUME CONTROL
DOWN-MIXING
audio clock 256 or 384fs
channels 1 to 8
I²S-BUS OUTPUTS
L, R
SPDIF
MGL324

Simplified block diagram.


SDA 64
SCL 63
ADDR 62
RESET 61
VDDDI 60
VSSDI 59
SCKI 58
SDI1 57
SDI0 56
SDBI 55
WSI 54
VSSDI 53
VDDDI 52
TDO 51
TRST 50
TCK 49
STANDALONE 1
EFO1 2
EFO2 3
EFO3 4
EFO4 5
EFO5 6
EFO6 7
VSSDI 8
VDDDI 9
EFI1 10
EFI2 11
EFI3 12
VDDDE 13
WSO 14
SCK 15
VSSDE 16
48 TMS
47 TDI
46 VSSDE
45 ACLK
44 VSSDA
43 CLKO
42 CLKI
41 VDDA
40 VDDDE
39 SYSCLK
38 VSSDE
37 VDDDI
36 VSSDI
35 VSSDE
34 SPDIF
33 SDB
SAA2505H
17 SDO0
18 SDO1
19 VDDDE
20 VSSDI
21 VDDDI
22 VSSDI
23 VDDDI
24 VDDDI
25 VSSDI
26 VDDDE
27 SDO2
28 SDO3
29 VSSDE
30 WSO3
31 SCKO3
32 VDDDE
MGL323

Pin configuration.

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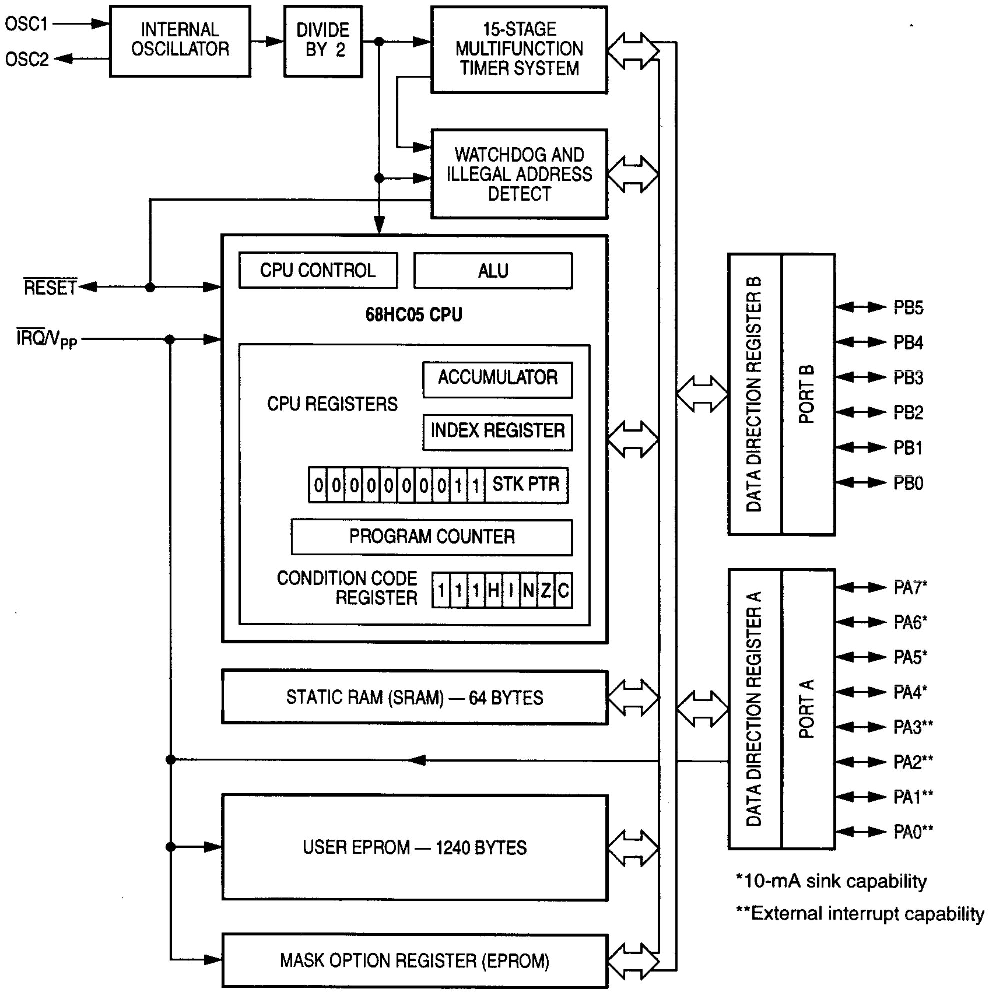
Figure 9-20

9.8.5 Diagram U, MC68HC705J1A (IC7708)

Internal Block Diagram and Pinning


OSC1
OSC2
INTERNAL OSCILLATOR
DIVIDE BY 2
15-STAGE MULTIFUNCTION TIMER SYSTEM
WATCHDOG AND ILLEGAL ADDRESS DETECT
RESET
IRQ/V_{PP}
CPU CONTROL
ALU
68HC05 CPU
CPU REGISTERS
ACCUMULATOR
INDEX REGISTER
0 0 0 0 0 0 0 0 1 1 STK PTR
PROGRAM COUNTER
CONDITION CODE REGISTER
1 1 1 H I N Z C
STATIC RAM (SRAM) — 64 BYTES
USER EPROM — 1240 BYTES
MASK OPTION REGISTER (EPROM)
DATA DIRECTION REGISTER B
PORT B
PB5
PB4
PB3
PB2
PB1
PB0
DATA DIRECTION REGISTER A
PORT A
PA7*
PA6*
PA5*
PA4*
PA3**
PA2**
PA1**
PA0**

*10-mA sink capability

**External interrupt capability

Figure 1-1. Block Diagram

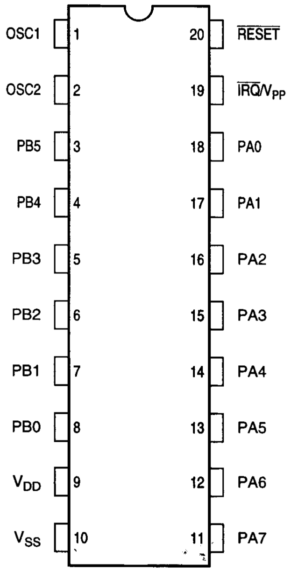

OSC1 1
OSC2 2
PB5 3
PB4 4
PB3 5
PB2 6
PB1 7
PB0 8
V_{DD} 9
V_{SS} 10
20 RESET
19 IRQ/V_{PP}
18 PA0
17 PA1
16 PA2
15 PA3
14 PA4
13 PA5
12 PA6
11 PA7

Figure 1-2. Pin Assignments

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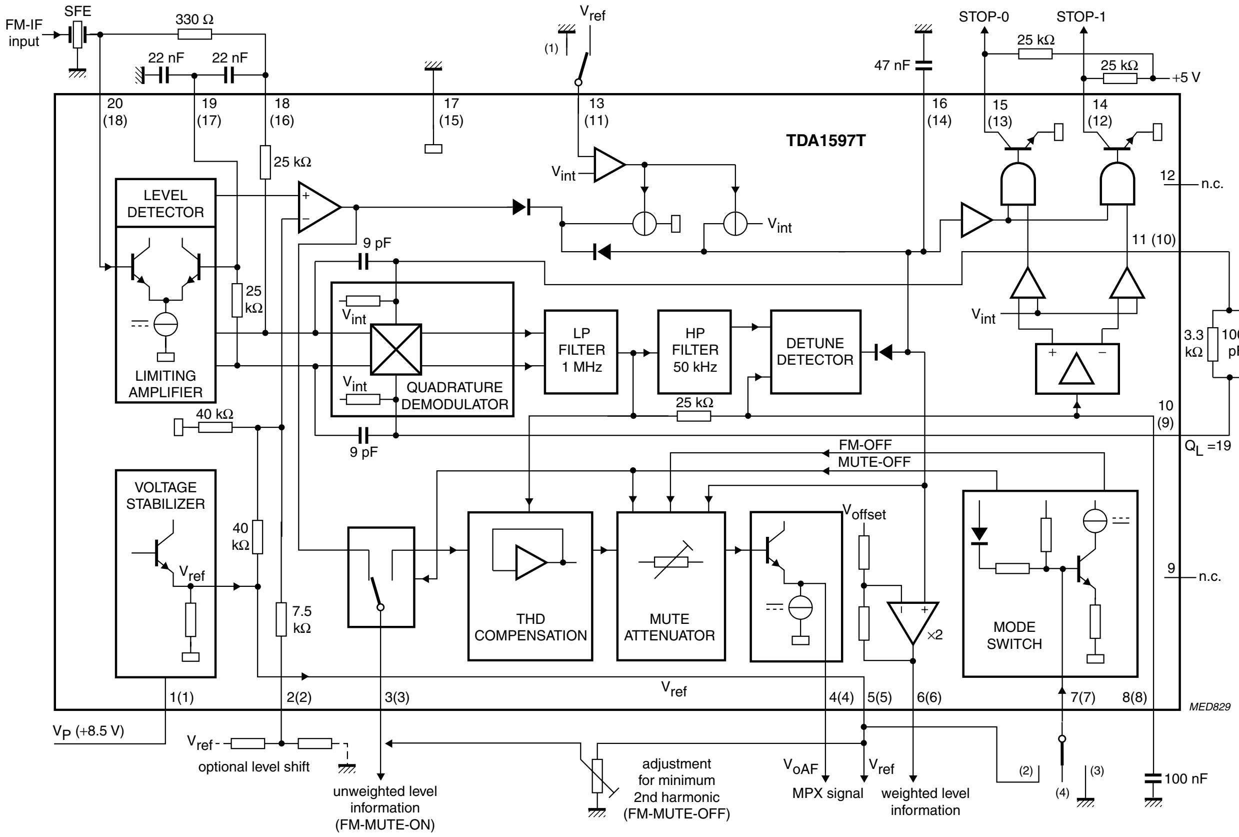
Figure 9-21

9.8.6 Diagram U, TDA1597 (IC7701)

Internal Block Diagram and Pinning


FM-IF input
SFE
330 Ω
22 nF
22 nF
Vref
(1)
47 nF
STOP-0
STOP-1
25 kΩ
25 kΩ
+5 V
20 (18)
19 (17)
18 (16)
17 (15)
13 (11)
16 (14)
15 (13)
14 (12)
TDA1597T
25 kΩ
Vint
LEVEL DETECTOR
12 n.c.
11 (10)
9 pF
25 kΩ
LIMITING AMPLIFIER
Vint
Vint
QUADRATURE DEMODULATOR
LP FILTER 1 MHz
HP FILTER 50 kHz
DETUNE DETECTOR
25 kΩ
Vint
3.3 kΩ
100 pF
40 kΩ
9 pF
10 (9)
FM-OFF
MUTE-OFF
QL =19
VOLTAGE STABILIZER
Vref
40 kΩ
7.5 kΩ
THD COMPENSATION
MUTE ATTENUATOR
Voffset
×2
MODE SWITCH
9 n.c.
Vref
1(1)
2(2)
3(3)
4(4)
5(5)
6(6)
7(7)
8(8)
MED829
VP (+8.5 V)
Vref
optional level shift
unweighted level information (FM-MUTE-ON)
adjustment for minimum 2nd harmonic (FM-MUTE-OFF)
VoAF
MPX signal
Vref
weighted level information
(2)
(3)
(4)
100 nF

The pin numbers given in parenthesis refer to the TDA1597.

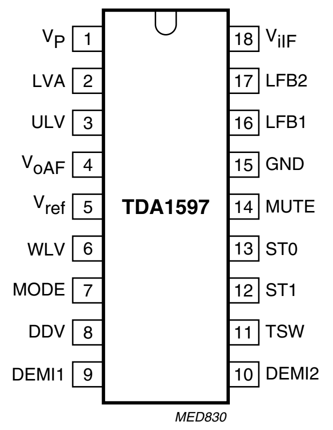
(1) Connecting pin 13 (11) to ground is only allowed to measure the current on pin 16 (14).

(2) FM-MUTE-OFF.

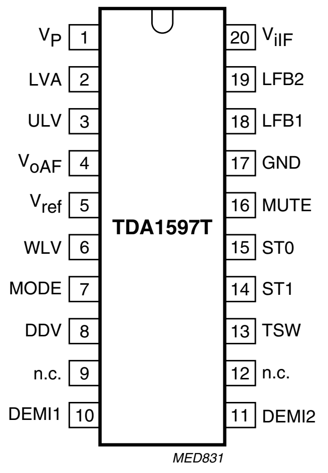
(3) FM-OFF.

(4) FM-MUTE-ON.

Block diagram and application circuit.


VP 1
LVA 2
ULV 3
VoAF 4
Vref 5
WLV 6
MODE 7
DDV 8
DEMI1 9
18 ViIF
17 LFB2
16 LFB1
15 GND
14 MUTE
13 ST0
12 ST1
11 TSW
10 DEMI2
TDA1597
MED830

Pin configuration (DIP version).


VP 1
LVA 2
ULV 3
VoAF 4
Vref 5
WLV 6
MODE 7
DDV 8
n.c. 9
DEMI1 10
20 ViIF
19 LFB2
18 LFB1
17 GND
16 MUTE
15 ST0
14 ST1
13 TSW
12 n.c.
11 DEMI2
TDA1597T
MED831

Pin configuration (SO version).

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Figure 9-22

10. Spare Parts List

Large Signal Panel [A]

Various

S001	3122 785 90420	28"/32"/36" line repair kit
0030	3104 304 19583	LSP Bracket
0037	3104 304 20264	LOT support bracket
0050	4822 255 41371	Spring line deflection
0051	4822 492 70789	Spring fix transistor
0052	4822 492 70789	Spring fix transistor
0053	3122 121 24785	Spring fix transistor
0054	3122 121 24785	Spring fix transistor
0061	4822 492 70789	Spring fix transistor
0062	4822 492 70789	Spring fix transistor
0065	3104 304 24821	Spacer LOT bracket
0303	4822 267 10774	2P male red
0304	4822 265 20723	2P male black
0311	4822 267 10978	7P male black
0315	4822 267 10979	9P male black
0317	4822 265 20723	2P male
0320	4822 267 10974	9P male
0321	4822 267 10978	7P male black
0324	4822 267 10972	5P male black
0325	4822 267 10967	3P male black
0328	4822 267 10962	11P male v
0335	4822 267 10969	3P male red
0336	4822 267 10967	3P male black
0337	4822 267 10967	3P male black
0338	4822 267 11043	3P male yellow
0390	4822 267 10963	3P male
0391	4822 267 10973	1P male
0393	2422 025 16583	5P female
0394	4822 267 10969	3P male
0395	4822 267 11043	3P male yellow
1460	4822 252 51186	Fuse 2A
8000	3104 311 03272	Eht cable 640 mm
8000	3104 311 03721	Eht cable 820 mm
8015	3104 308 77981	Focus cable 360mm
8300	4822 320 20216	Focus cable 364mm
8301	4822 320 20216	Focus cable 364mm
8304	3104 301 08671	Cable 3P 220 mm
8311	3104 301 08332	Cable 7P 340 mm
8315	3104 301 09611	Cable 9P 340 mm
8317	3104 311 00331	Cable 3P 340 mm
8320	3104 301 08752	Cable 9P 560 mm
8321	3104 301 08682	Cable 7P 180 mm
8324	3104 301 08762	Cable 5P 400 mm
8325	3104 311 00131	Cable 3P 560 mm
8325	3104 311 01971	Cable 3P 140 mm
8328	3104 311 01161	Cable 11P 340 mm
8337	4822 320 12671	Cable 3P 560 mm
8394	3104 311 00421	Cable 3P 480 mm
8395	3104 311 01991	Cable 3P 560 mm
8400	2422 025 16691	3P male

⊣⊢

2400	4822 124 11575	47µF 20% 160V
2401	4822 121 43343	4.7nF 10% 400V
2409	4822 126 12726	47pF 5% 50V
2410	2222 462 90009	4.7nF 2% 250V
2412	5322 121 42489	33nF 5% 250V
2413	4822 124 12255	10µF 20% 50V
2414	5322 121 42489	33nF 5% 250V
2415	5322 122 32334	220pF 10% 100V
2417	4822 121 42408	220nF 5% 63V
2418	4822 126 12263	220pF 10% 1kV
2419	5322 121 44151	33nF 10% 400V
2420	4822 121 70581	1.5nF 5% 2kV
2420	4822 121 70594	1nF 5% 2kV
2420	4822 121 70595	1.2nF 5% 2kV
2422	2038 301 00312	1.2µF 5% 250V
2425	4822 121 10526	9.1nF 5% 2kV
2425	4822 121 70435	10nF 5% 2kV
2426	4822 121 10551	27nF 5% 1600V
2431	5322 122 32331	1nF 10% 100V
2431	5322 122 32818	2.2nF 10% 100V
2433	2022 333 00086	470nF 5% 250V
2433	2022 333 00163	360nF 5% 250V
2433	4822 121 10518	390nF 5% 250V
2436	4822 124 41584	100µF 20% 10V
2437	4822 124 41741	2.2µF 20% 350V
2438	4822 122 33449	47nF 30% 50V
2439	5322 122 32331	1nF 10% 100V
2439	5322 122 32818	2.2nF 10% 100V
2442	4822 124 12297	4.7µF 20% 350V
2448	2020 300 90572	8.2nF 10% 50V
2448	4822 121 41857	10nF 5% 250V
2450	4822 121 40518	100nF 10% 250V
2454	4822 121 42408	220nF 5% 63V
2455	4822 121 43897	1nF 5% 400V
2455	4822 126 12451	820pF 10% 50V
2457	4822 121 70386	47nF 10% 250V
2460	4822 126 13185	680pF 10% 500V
2461	4822 124 11767	470µF 20% 25V
2462	4822 124 81039	3300µF 20% 25V
2463	4822 126 13185	680pF 10% 500V
2465	4822 122 31177	470pF 10% 500V
2466	4822 124 11767	470µF 20% 25V
2480	4822 121 43913	470nF 10% 100V
2480	4822 124 40763	2.2µF 100V
2481	5322 122 32311	470pF 10% 100V
2482	4822 124 22466	1µF 20% 50V
2484	4822 124 40769	4.7µF 20% 100V
2487	4822 124 40248	10µF 20% 63V
2493	2222 479 90166	68nF 5% 400V
2494	4822 124 81144	1000µF 16V
2506	4822 121 10711	100nF 20% 275V
2520	4822 121 43396	120nF 5% 63V
2520	4822 121 43526	47nF 5% 250V
2530	4822 124 21913	1µF 20% 63V
2612	5322 122 32311	470pF 10% 100V
2613	5322 122 32311	470pF 10% 100V
2615	2020 021 91513	100µF 20% 50V
2616	5322 121 42386	100nF 5% 63V
2617	4822 121 42408	220nF 5% 63V
2618	4822 121 51252	470nF 5% 63V
2620	5322 124 40641	10µF 20% 100V
2625	4822 121 43526	47nF 5% 250V
2714	4822 122 10182	100pF 5% 50V
2716	4822 122 10182	100pF 5% 50V
2730	4822 124 40248	10µF 20% 63V
2732	4822 124 12392	47µF 20% 16V
2733	5322 121 42386	100nF 5% 63V
2738	4822 122 10182	100pF 5% 50V
2739	4822 122 10182	100pF 5% 50V
2740	4822 122 30103	22nF 80% 63V
2741	4822 122 30103	22nF 80% 63V
2742	5322 121 42386	100nF 5% 63V
2743	4822 126 12638	6.8nF 10% 50V
2748	4822 121 43526	47nF 5% 250V
2749	4822 121 43526	47nF 5% 250V
2750	4822 122 30103	22nF 80% 63V
2751	4822 122 30103	22nF 80% 63V
2755	4822 126 12638	6.8nF 10% 50V
2756	4822 121 43526	47nF 5% 250V
2757	4822 121 43526	47nF 5% 250V
2760	4822 122 30103	22nF 80% 63V
2761	4822 122 30103	22nF 80% 63V
2762	4822 124 12392	47µF 20% 16V
2763	4822 124 80408	4.7µF 20% 50V
2768	4822 121 43526	47nF 5% 250V
2769	4822 121 43526	47nF 5% 250V
2770	4822 122 30103	22nF 80% 63V
2771	4822 122 30103	22nF 80% 63V
2772	5322 121 42386	100nF 5% 63V
2774	5322 121 42386	100nF 5% 63V
2775	4822 126 12638	6.8nF 10% 50V
2776	4822 121 43526	47nF 5% 250V
2777	4822 121 43526	47nF 5% 250V
2780	4822 124 21913	1µF 20% 63V
2790	4822 124 80061	1000µF 20% 25V
2791	4822 124 80061	1000µF 20% 25V
2792	5322 121 42386	100nF 5% 63V
2793	5322 121 42386	100nF 5% 63V
2794	4822 124 40248	10µF 20% 63V
2795	4822 124 40248	10µF 20% 63V

−▭−

3401	4822 053 12479	47Ω 5% 3W
3404	4822 116 83883	470Ω 5% 0.5W
3406	4822 116 52175	100Ω 5% 0.5W
3407	4822 050 21003	10k 1% 0.6W
3411	4822 116 52195	47Ω 5% 0.5W
3413	4822 116 83883	470Ω 5% 0.5W
3414	4822 116 52226	560Ω 5% 0.5W
3415	4822 053 12229	22Ω 5% 3W
3417	4822 116 52176	10Ω 5% 0.5W
3423	4822 053 10688	6Ω8 5% 1W
3425	4822 116 52176	10Ω 5% 0.5W
3426	4822 116 52176	10Ω 5% 0.5W
3428	4822 116 52245	150k 5% 0.5W
3429	4822 116 83884	47k 5% 0.5W
3431	4822 052 10221	220Ω 5% 0.33W
3431	4822 052 11471	470Ω 5% 0.5W
3432	4822 116 83884	47k 5% 0.5W
3436	4822 116 52269	3k3 5% 0.5W
3437	4822 116 52245	150k 5% 0.5W
3438	4822 050 23303	33k 1% 0.6W
3440	4822 050 23303	33k 1% 0.6W
3441	4822 116 52272	330k 5% 0.5W
3442	4822 116 83874	220k 5% 0.5W
3443	4822 052 11688	6Ω8 5% 0.5W
3444	4822 050 23303	33k 1% 0.6W
3445	4822 116 52256	2k2 5% 0.5W
3446	4822 050 11002	1k 1% 0.4W
3447	4822 052 10229	22Ω 5% 0.33W
3448	4822 116 52252	180k 5% 0.5W
3448	4822 116 52291	56k 5% 0.5W
3449	4822 050 21003	10k 1% 0.6W
3449	4822 116 52176	10Ω 5% 0.5W
3450	4822 116 83884	47k 5% 0.5W
3451	4822 050 23303	33k 1% 0.6W
3451	4822 116 52264	27k 5% 0.5W
3452	4822 116 52257	22k 5% 0.5W
3452	4822 116 52264	27k 5% 0.5W
3453	4822 116 80176	1Ω 5% 0.5W
3454	4822 116 52291	56k 5% 0.5W
3454	4822 116 83882	39k 5% 0.5W
3454	4822 116 83884	47k 5% 0.5W
3455	4822 116 83874	220k 5% 0.5W
3457	4822 050 12704	270k 1% 0.4W
3457	4822 116 52292	560k 5% 0.5W
3457	4822 116 52298	680k 5% 0.5W
3458	4822 116 52252	180k 5% 0.5W
3458	4822 116 52272	330k 5% 0.5W
3458	4822 116 52304	82k 5% 0.5W
3459	4822 116 83883	470Ω 5% 0.5W
3462	4822 052 11108	1Ω 5% 0.5W
3463	4822 052 11108	1Ω 5% 0.5W
3464	4822 050 11002	1k 1% 0.4W
3465	4822 052 10151	150Ω 5% 0.33W
3466	4822 052 11108	1Ω 5% 0.5W
3467	4822 052 11108	1Ω 5% 0.5W
3468	4822 052 10151	150Ω 5% 0.33W
3478	4822 116 83872	220Ω 5% 0.5W
3480	4822 116 52291	56k 5% 0.5W
3481	4822 052 10102	1k 5% 0.33W
3482	4822 116 52272	330k 5% 0.5W
3483	4822 052 10478	4Ω7 5% 0.33W
3484	4822 052 10338	3Ω3 5% 0.33W
3484	4822 052 10478	4Ω7 5% 0.33W
3484	4822 052 10688	6Ω8 5% 0.33W
3485	4822 050 21006	10M 1% 0.6W
3485	4822 050 27505	7M5 1% 0.6W
3486	4822 116 52234	100k 5% 0.5W
3487	4822 052 10133	13k 5% 0.33W
3488	4822 050 11002	1k 1% 0.4W
3489	4822 116 52191	33Ω 5% 0.5W
3490	4822 116 83874	220k 5% 0.5W
3491	4822 116 83874	220k 5% 0.5W
3492	4822 050 23303	33k 1% 0.6W
3493	4822 050 11002	1k 1% 0.4W
3498	4822 116 83872	220Ω 5% 0.5W
3506	4822 117 12027	PTC 18Ω-3k 25%
3507	4822 117 12027	PTC 18Ω-3k 25%
3509	4822 052 10472	4k7 5% 0.33W
3510	4822 050 21003	10k 1% 0.6W
3511	4822 116 52263	2k7 5% 0.5W
3512	4822 116 52191	33Ω 5% 0.5W
3520	2138 101 13753	75k 5% 0.5W
3520	4822 116 52234	100k 5% 0.5W
3521	4822 050 18204	820k 1% 0.4W
3521	4822 116 83866	1M 5% 0.5W
3530	4822 050 21003	10k 1% 0.6W
3531	4822 116 52257	22k 5% 0.5W
3531	4822 116 83884	47k 5% 0.5W
3532	4822 050 18204	820k 1% 0.4W
3532	4822 116 52298	680k 5% 0.5W
3601	4822 116 80676	1Ω5 5% 0.5W
3602	4822 116 80176	1Ω 5% 0.5W
3602	4822 116 80676	1Ω5 5% 0.5W
3603	4822 116 80176	1Ω 5% 0.5W
3610	4822 050 11002	1k 1% 0.4W
3611	4822 050 28201	820Ω 1% 0.6W
3612	4822 050 28201	820Ω 1% 0.6W
3613	4822 050 11002	1k 1% 0.4W
3614	4822 050 11002	1k 1% 0.4W
3617	4822 052 10158	1Ω5 5% 0.33W
3618	4822 116 52195	47Ω 5% 0.5W
3618	4822 116 83872	220Ω 5% 0.5W
3619	4822 116 52195	47Ω 5% 0.5W
3619	4822 116 83872	220Ω 5% 0.5W
3620	4822 050 21003	10k 1% 0.6W
3625	4822 116 52175	100Ω 5% 0.5W

3630	4822 116 52289	5k6 5% 0.5W
3703	4822 116 80176	1Ω 5% 0.5W
3721	4822 116 52234	100k 5% 0.5W
3722	4822 116 52234	100k 5% 0.5W
3725	4822 116 52234	100k 5% 0.5W
3726	4822 116 52234	100k 5% 0.5W
3728	4822 116 52234	100k 5% 0.5W
3729	4822 116 52234	100k 5% 0.5W
3730	4822 116 83883	470Ω 5% 0.5W
3731	4822 116 83884	47k 5% 0.5W
3732	4822 116 83884	47k 5% 0.5W
3733	4822 116 52207	1k2 5% 0.5W
3734	4822 116 52257	22k 5% 0.5W
3735	4822 116 83961	6k8 5%
3740	4822 116 52256	2k2 5% 0.5W
3741	4822 116 52226	560Ω 5% 0.5W
3743	4822 116 80176	1Ω 5% 0.5W
3745	4822 117 12798	8Ω2 5% 0.25W
3751	4822 116 80176	1Ω 5% 0.5W
3752	4822 116 52256	2k2 5% 0.5W
3753	4822 116 52226	560Ω 5% 0.5W
3754	4822 117 12798	8Ω2 5% 0.25W
3760	4822 116 52256	2k2 5% 0.5W
3761	4822 116 52226	560Ω 5% 0.5W
3763	4822 116 80176	1Ω 5% 0.5W
3765	4822 117 12798	8Ω2 5% 0.25W
3772	4822 116 52256	2k2 5% 0.5W
3773	4822 116 52226	560Ω 5% 0.5W
3774	4822 117 12798	8Ω2 5% 0.25W
3780	4822 116 52289	5k6 5% 0.5W
3781	4822 116 52289	5k6 5% 0.5W
3782	4822 116 52289	5k6 5% 0.5W
3783	4822 116 52289	5k6 5% 0.5W
3785	4822 116 52263	2k7 5% 0.5W
3786	4822 116 52269	3k3 5% 0.5W
3787	4822 050 21003	10k 1% 0.6W
3790	4822 116 52234	100k 5% 0.5W
3791	4822 116 52234	100k 5% 0.5W

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5400	4822 157 71467	39µH 10%
5401	4822 157 71452	18µH 10%
5410	4822 146 11066	Line driver transf.
5421	3128 138 55611	Linearity coil (36")
5421	3128 138 56152	Linearity coil (28")
5421	3128 138 57411	Linearity coil (32")
5422	4822 146 11137	Bridge coil
5423	4822 157 71097	0.56µH
5425	4822 157 11411	Bead 100mHz
5426	4822 157 11771	0.09µH 10%
5430	3128 138 20931	LOT CML16 (32"/36")
5430	8204 000 75001	LOT (28")
5460	4822 157 71466	2.2µH 20%
5462	4822 157 71466	2.2µH 20%
5466	4822 157 71441	15µH 10%
5466	4822 157 71452	18µH 10%
5468	4822 157 10452	10µH 10%
5468	4822 157 71452	18µH 10%
5480	4822 157 63253	Choke
5490	4822 526 10704	Bead 100mHz
5491	4822 526 10704	Bead 100mHz
5493	8228 001 34391	Driver Transformer CU15
5501	4822 157 11422	12µH 10%
5502	4822 157 11422	12µH 10%
5617	4822 157 11771	0.09µH 10%
5701	4822 157 11299	10µH 5%
5702	4822 157 11299	10µH 5%

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6407	4822 130 42488	BYD33D
6408	4822 130 42488	BYD33D
6410	4822 130 30621	1N4148
6421	9322 165 72687	DTV1500MFP
6422	4822 130 10218	BY229X-800
6437	4822 130 30621	1N4148
6441	4822 130 42488	BYD33D
6451	4822 130 34382	BZX79-B8V2
6452	4822 130 30621	1N4148
6453	4822 130 34142	BZX79-B33
6454	4822 130 30842	BAV21
6480	4822 130 61219	BZX79-B10
6483	4822 130 30842	BAV21
6484	4822 130 30621	1N4148
6485	4822 130 30621	1N4148
6486	4822 130 30621	1N4148
6489	3139 120 52021	BYV29X-500
6490	3139 120 52021	BYV29X-500
6491	3139 120 52021	BYV29X-500
6495	4822 130 30621	1N4148
6496	4822 130 30621	1N4148
6530	4822 130 30621	1N4148
6608	4822 130 34174	BZX79-B4V7
6609	4822 130 31983	BAT85
6610	4822 130 30621	1N4148
6614	5322 130 31938	BYV27-200
6617	4822 130 42488	BYD33D
6618	5322 130 32296	BZV85-C10
6618	5322 130 33635	BZV85-C8V2
6620	4822 130 42488	BYD33D
6790	5322 130 34563	BZX79-C2V7
6791	5322 130 34563	BZX79-C2V7

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7409	4822 130 40959	BC547B
7411	5322 130 44349	BC635
7421	9340 210 30127	BU2520DX
7437	4822 130 44568	BC557B
7440	4822 209 70672	LM358N Selected
7441	4822 130 40959	BC547B
7442	4822 130 44568	BC557B
7480	4822 130 11336	STP16NE06FP
7484	4822 209 70672	LM358N Selected
7490	4822 130 44568	BC557B
7600	4822 209 90009	TDA8177
7710	5322 209 86445	LM7805CT
7720	4822 209 11079	LM79M05CT
7730	4822 130 44568	BC557B
7731	4822 130 40959	BC547B
7732	4822 130 40959	BC547B
7733	4822 130 40959	BC547B
7740	4822 209 32641	TDA2616Q
7750	4822 209 32641	TDA2616Q
7760	4822 209 32641	TDA2616Q
7770	4822 209 32641	TDA2616Q
7780	4822 130 40959	BC547B

Top Supply Panel [B]

Various

S002	3122 785 90440	Standby supply repair kit
S003	3122 785 90430	Main supply repair kit
0001	3104 304 19652	Power supply frame
0052	3122 121 24785	Spring fix transistor
0053	3122 121 24785	Spring fix transistor
0056	3122 121 24785	Spring fix transistor
0057	3122 121 24785	Spring fix transistor
0066	3122 121 24785	Spring fix transistor
0067	3122 121 24785	Spring fix transistor
0072	4822 466 93461	Insulator 20 X 25
0150	4822 265 11253	Fuse holder
0151	4822 265 11253	Fuse holder
0302	2422 025 16374	2P Male
0304	4822 265 20723	3P Male
0310	4822 267 10964	9P Male red
0320	4822 267 10974	9P Male
0321	4822 267 10978	7P Male black
0330	2422 025 14904	7P Male
1001	4822 253 30467	Fuse 6,3A
1002	2422 132 07411	Relay 1P 5V 5A
1003	4822 070 33152	Fuse 3.15A
1005	4822 252 60151	Surge Protect
1006	4822 252 51173	Fuse 1,0A
1007	2422 132 07409	Relay 2P 12V 5A

⊣⊢

2000	4822 126 13589	470nF 275V
2001	4822 124 11913	22nF 20% 275V
2002	4822 124 11913	22nF 20% 275V
2007	4822 121 41857	10nF 5% 250V
2009	4822 121 41857	10nF 5% 250V
2100	2020 024 90718	10µF 20% 450V
2101	2252 561 55609	68pF 5% 1kV
2102	5322 121 42386	100nF 5% 63V
2103	5322 121 42386	100nF 5% 63V
2104	2020 012 93057	2200µF 20% 16V
2105	5322 122 32818	2.2nF 10% 100V
2106	4822 126 14208	220pF 20% 250V
2111	5322 121 42386	100nF 5% 63V
2201	4822 124 42159	330µF 20% 400V
2202	4822 124 11767	470µF 20% 25V
2203	4822 124 80144	220µF 20% 25V
2204	5322 121 51214	680pF 1% 400V
2205	4822 121 51288	100pF 630V
2207	4822 121 41854	150nF 5% 63V
2208	5322 121 42386	100nF 5% 63V
2210	4822 126 13451	2.2nF 10% 2kV
2211	2222 375 90224	39nF 5% 1kV
2212	4822 126 13862	1.5nF 10% 2kV
2213	4822 126 13862	1.5nF 10% 2kV
2214	4822 126 14504	3.3nF 20% 250V
2215	4822 122 30043	10nF 80% 63V
2216	5322 121 42386	100nF 5% 63V
2217	4822 124 40207	100µF 20% 25V
2219	4822 122 30043	10nF 80% 63V
2220	4822 124 12417	2200µF 20% 25V
2221	4822 124 12417	2200µF 20% 25V
2222	2020 021 91503	1000µF 5% 35V
2223	4822 124 11572	47µF 20% 160V
2225	5322 122 32331	1nF 10% 100V
2226	5322 121 42386	100nF 5% 63V
2227	4822 121 43897	1nF 5% 400V
2228	4822 124 81151	22µF 50V
2230	4822 124 11878	4700µF 16V
2231	4822 121 41854	150nF 5% 63V
2232	4822 122 30043	10nF 80% 63V
2233	4822 122 30043	10nF 80% 63V
2234	2020 021 91503	1000µF 5% 35V
2235	5322 122 32331	1nF 10% 100V
2236	4822 124 11767	470µF 20% 25V
2237	4822 122 31175	1nF 10% 500V
2238	5322 121 42386	100nF 5% 63V
2239	4822 121 42062	150 nF 10% 400V
2240	5322 122 32261	4.7nF 10% 100V
2241	4822 122 30043	10nF 80% 63V
2242	4822 122 33449	47nF 30% 50V
2244	4822 126 12263	220pF 10% 1kV
2245	4822 126 10206	2.2nF 10% 500V
2246	4822 126 10206	2.2nF 10% 500V
2250	5322 122 32331	1nF 10% 100V
2251	4822 121 51305	15nF 10% 50V
2252	5322 122 32818	2.2nF 10% 100V
2253	4822 121 51252	470nF 5% 63V
2260	4822 122 30103	22nF 80% 63V
2261	4822 126 10206	2.2nF 10% 500V
2262	4822 126 10206	2.2nF 10% 500V
2263	5322 122 32311	470pF 10% 100V
2264	5322 122 32311	470pF 10% 100V
2265	2020 300 90565	2.7nF 10% 50V
2266	4822 121 10766	390pF 1% 630V
2267	4822 124 22652	2.2µF 20% 50V
2268	4822 124 22652	2.2µF 20% 50V
2269	5322 121 42386	100nF 5% 63V
2271	5322 122 32331	1nF 10% 100V
2272	5322 122 32331	1nF 10% 100V
2274	4822 122 33799	1nF 10% 1kV
2275	4822 122 31175	1nF 10% 500V
2276	5322 122 32331	1nF 10% 100V
2277	5322 122 32818	2.2nF 10% 100V
2279	4822 121 70654	2.2nF 10% 50V
2280	4822 124 22652	2.2µF 20% 50V
2281	4822 124 22652	2.2µF 20% 50V

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3001	2322 595 90022	VDR 1mA/612V max 1120V
3002	3198 013 04710	470Ω 20% 0.5W
3003	4822 116 52256	2k2 5% 0.5W
3004	4822 116 52234	100k 5% 0.5W
3007	4822 116 52283	4k7 5% 0.5W
3008	4822 116 52256	2k2 5% 0.5W
3009	4822 050 21003	10k 1% 0.6W
3108	4822 116 52176	10Ω 5% 0.5W
3110	4822 052 10688	6Ω8 5% 0.33W
3112	4822 050 11002	1k 1% 0.4W
3113	4822 116 52256	2k2 5% 0.5W
3114	4822 050 24702	4k7 1% 0.6W
3115	4822 050 24702	4k7 1% 0.6W
3118	4822 116 52257	22k 5% 0.5W
3120	4822 116 52175	100Ω 5% 0.5W
3121	4822 050 11002	1k 1% 0.4W
3122	4822 116 52175	100Ω 5% 0.5W
3200	4822 052 10569	56Ω 5% 0.33W
3201	4822 116 52175	100Ω 5% 0.5W
3202	4822 116 52303	8k2 5% 0.5W
3203	4822 050 23903	39k 1% 0.6W
3204	4822 116 52264	27k 5% 0.5W
3205	4822 116 52289	5k6 5% 0.5W
3206	4822 050 21003	10k 1% 0.6W
3207	4822 050 21003	10k 1% 0.6W
3208	4822 116 83883	470Ω 5% 0.5W
3209	4822 116 52269	3k3 5% 0.5W
3210	4822 116 83883	470Ω 5% 0.5W
3211	4822 116 83883	470Ω 5% 0.5W
3214	4822 052 10101	100Ω 5% 0.33W
3215	4822 052 10479	47Ω 5% 0.33W
3216	4822 050 11002	1k 1% 0.4W
3217	4822 052 10101	100Ω 5% 0.33W
3218	4822 052 10479	47Ω 5% 0.33W
3219	4822 050 11002	1k 1% 0.4W
3221	4822 052 10109	10Ω 5% 0.33W
3222	4822 116 52249	1k8 5% 0.5W

3223	4822 116 52249	1k8 5% 0.5W
3224	4822 116 52249	1k8 5% 0.5W
3227	4822 052 10129	12Ω 5% 0.33W
3228	2322 257 41123	12k 5% 5W
3229	4822 116 52175	100Ω 5% 0.5W
3230	4822 050 11002	1k 1% 0.4W
3231	4822 050 21002	1k 1% 0.6W
3232	4822 050 21503	15k 1% 0.6W
3233	4822 050 11002	1k 1% 0.4W
3234	4822 116 52175	100Ω 5% 0.5W
3235	4822 116 52207	1k2 5% 0.5W
3236	4822 116 52303	8k2 5% 0.5W
3237	4822 050 21604	160k 1% 0.6W
3238	4822 050 22702	2k7 1% 0.6W
3239	4822 101 11186	470Ω 30% 0.1W
3240	4822 116 52226	560Ω 5% 0.5W
3241	4822 116 52226	560Ω 5% 0.5W
3242	4822 050 25603	56k 1% 0.6W
3243	4822 050 25603	56k 1% 0.6W
3244	4822 050 21003	10k 1% 0.6W
3245	4822 116 83882	39k 5% 0.5W
3246	4822 116 83961	6k8 5%
3247	4822 116 52175	100Ω 5% 0.5W
3248	4822 050 21002	1k 1% 0.6W
3249	4822 050 21003	10k 1% 0.6W
3250	4822 050 28204	820k 1% 0.6W
3251	4822 050 26804	680k 1% 0.6W
3252	4822 050 21003	10k 1% 0.6W
3253	4822 116 52244	15k 5% 0.5W
3254	4822 050 21003	10k 1% 0.6W
3255	4822 116 83961	6k8 5%
3256	4822 050 21003	10k 1% 0.6W
3257	4822 116 52213	180Ω 5% 0.5W
3258	4822 053 20565	5M6 5% 0.25W
3259	4822 116 52244	15k 5% 0.5W
3260	4822 050 24708	4Ω7 1% 0.6W
3261	4822 116 52297	68k 5% 0.5W
3262	4822 116 52234	100k 5% 0.5W
3263	4822 050 26808	6Ω8 1% 0.6W
3264	4822 050 11002	1k 1% 0.4W
3265	4822 050 11002	1k 1% 0.4W
3266	4822 050 21003	10k 1% 0.6W
3267	4822 116 52256	2k2 5% 0.5W
3268	4822 050 24708	4Ω7 1% 0.6W
3269	4822 050 24708	4Ω7 1% 0.6W
3274	4822 116 52195	47Ω 5% 0.5W
3275	4822 116 80176	1Ω 5% 0.5W
3277	4822 050 11002	1k 1% 0.4W
3278	4822 050 21003	10k 1% 0.6W
3279	4822 116 52264	27k 5% 0.5W
3280	4822 116 83884	47k 5% 0.5W
3998	4822 050 21003	10k 1% 0.6W

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5000	2422 549 44911	Mainsfilter
5101	8228 001 37422	Standby transf. CE165T
5103	4822 157 71466	2.2µH 20%
5104	4822 157 71466	2.2µH 20%
5105	4822 526 10704	Bead 100mHz
5106	4822 526 10704	Bead 100mHz
5201	8222 289 53691	Driver transf. CE136H
5202	8228 001 37502	Transformer CE423D
5204	8228 001 37404	DC-DC convertor transf.
5205	2422 535 94637	4.7µH 20%
5206	4822 157 11411	Bead 100mHz
5207	4822 157 11411	Bead 100mHz
5208	4822 157 63985	33µH 5%
5209	4822 157 11411	Bead 100mHz
5210	4822 157 51462	10µH 10%
5212	4822 157 11411	Bead 100mHz
5213	4822 157 11411	Bead 100mHz
5215	4822 157 11411	Bead 100mHz
5216	4822 157 11411	Bead 100mHz
5217	4822 526 10704	Bead 100mHz
5219	4822 157 11411	Bead 100mHz
5222	4822 157 71453	27µH 10%
5223	4822 157 71453	27µH 10%
5224	4822 157 71453	27µH 10%
5225	4822 157 11411	Bead 100mHz
5226	4822 157 11411	Bead 100mHz
5227	4822 157 11411	Bead 100mHz
5228	4822 157 11411	Bead 100mHz
5229	4822 157 11411	Bead 100mHz
5230	4822 157 11411	Bead 100mHz
5231	4822 157 11411	Bead 100mHz
5232	4822 157 11771	0.09µH 10%
5240	4822 157 11411	Bead 100mHz
5241	4822 526 10704	Bead 100mHz
5242	4822 526 10704	Bead 100mHz
5243	4822 157 11411	Bead 100mHz
5244	4822 157 11411	Bead 100mHz
5271	4822 157 71453	27µH 10%
5272	2422 535 94637	4.7µH 20%
5273	4822 157 71453	27µH 10%
5274	4822 157 11869	33µH 10%
5275	4822 157 11411	Bead 100mHz
5280	2422 549 44872	Mainsfilter

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6008	3198 010 10640	Bridge cell GBU4K
6009	4822 130 30621	1N4148
6101	4822 130 83147	DF06M
6104	9336 018 60133	BZT03-C300
6105	9336 018 60133	BZT03-C300
6106	9322 161 77682	SB540L-7024
6108	4822 130 34278	BZX79-B6V8
6200	4822 130 30621	1N4148
6201	4822 130 30621	1N4148
6202	9337 534 30133	BZD23-C15
6203	9337 534 30133	BZD23-C15
6204	4822 130 30621	1N4148
6205	4822 130 30621	1N4148
6206	4822 130 34441	BZX79-B22
6207	4822 130 30621	1N4148
6208	4822 130 30621	1N4148
6209	4822 130 31024	BZX79-B18
6210	4822 130 42488	BYD33D
6211	4822 130 30621	1N4148
6212	4822 130 30621	1N4148
6213	4822 130 31983	BAT85
6214	4822 130 30621	1N4148
6216	4822 130 30621	1N4148
6217	4822 130 30621	1N4148
6218	9322 131 78682	D4SBL20
6219	4822 130 30621	1N4148
6220	4822 130 30621	1N4148
6221	4822 130 34174	BZX79-B4V7
6222	9322 129 53687	G10DCT
6224	9322 131 78682	D4SBL20
6230	4822 130 83801	PBYR745F
6234	4822 130 34197	BZX79-B12
6235	4822 130 30621	1N4148
6237	9322 161 77682	SB540L-7024
6238	4822 130 34278	BZX79-B6V8
6239	4822 130 34197	BZX79-B12
6270	4822 130 30621	1N4148
6271	4822 130 30621	1N4148

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7000	4822 130 40981	BC337-25
7001	4822 130 40959	BC547B
7103	9322 037 99682	TNY256P
7104	9322 149 04682	TCET1102
7105	4822 209 81397	TL431CLPST
7106	4822 130 11421	BT151X-500R
7200	9322 149 04682	TCET1102
7201	4822 130 40959	BC547B
7202	4822 130 44568	BC557B
7203	4822 130 44568	BC557B
7204	4822 130 44568	BC557B
7205	9322 108 21682	MC34067P
7206	9322 132 14687	STP11NB40FP
7207	9322 132 14687	STP11NB40FP
7211	9322 129 22687	L4977A
7212	4822 209 81397	TL431CLPST
7213	4822 209 12334	L4940V85
7230	4822 130 44568	BC557B
7231	4822 130 40959	BC547B
7232	4822 130 11421	BT151X-500R

Mains Switch Panel [E]

Various

0040	3104 307 97621	Mainsknob FL11
0046	3104 304 23471	Bracket mains unit FL11
0151	4822 256 91766	Led holder
0152	4822 256 91766	Led holder
0170	4822 256 10562	Photo diode holder
0201	2422 025 16268	7P Male
0202	2422 025 16268	2P Male
0241	2422 025 06354	9P Male
0245	4822 267 10748	3P Male
1050	9322 154 48667	IR Receiver TSOP2236
1051	2422 128 02972	Mains switch 2P 8/128A
8202	3104 301 08291	Cable 2P3 560mm black
8241	3104 301 09381	Cable 9P 680mm white

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2051	4822 124 41584	100µF 20% 10V
2070	4822 126 13879	220nF 20% 16V
2071	4822 124 40248	10µF 20% 63V

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3050	4822 117 13577	330Ω 1% 1.25W
3051	4822 051 30471	470Ω 5% 0.062W
3054	4822 051 20471	470Ω 5% 0.1W
3057	4822 053 21335	3M3 5% 0.5W
3061	4822 051 30332	3k3 5% 0.062W
3063	4822 052 10478	4Ω7 5% 0.33W
3064	4822 052 10478	4Ω7 5% 0.33W
3066	4822 053 21335	3M3 5% 0.5W
3070	4822 051 30334	330k 5% 0.062W
3071	4822 051 30334	330k 5% 0.062W
3072	4822 051 30102	1k 5% 0.062W
3073	4822 051 30103	10k 5% 0.062W
3074	4822 051 30472	4k7 5% 0.062W
3075	4822 051 30472	4k7 5% 0.062W
3076	4822 051 30682	6k8 5% 0.062W
3077	4822 051 30103	10k 5% 0.062W
3078	4822 051 30102	1k 5% 0.062W
3079	4822 051 30332	3k3 5% 0.062W
3082	4822 051 30008	Jumper 0603
3998	4822 116 52206	120Ω 5% 0.5W

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6051	4822 209 72895	TLUV5320
6052	9322 150 78676	LED IR TSAL6400
6053	4822 130 10838	UDZ3.3B
6070	4822 130 11595	BPW46

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7050	4822 130 41246	BC327-25
7070	4822 209 70672	LM358N Selected

Picture Tube Panel [F]

Various

0041	3122 121 24785	SPRING fix IC
0042	3122 121 24785	SPRING fix IC
0043	3122 121 24785	SPRING fix IC
0297	2422 500 80036	CRT socket 9P
0324	4822 267 10972	5P
0334	4822 267 10973	1P
0340	4822 267 10974	9P
0383	4822 267 10967	3P
1382	2422 025 17408	9P male

⊣⊢

2330	2020 552 93645	39pF 5% 50V
2332	5322 126 10223	4.7nF 10% 63V
2336	4822 126 14585	100nF 10% 50V
2337	5322 121 42489	33nF 5% 250V
2340	2020 552 93645	39pF 5% 50V
2342	5322 126 10223	4.7nF 10% 63V
2346	4822 126 14585	100nF 10% 50V
2347	5322 121 42489	33nF 5% 250V
2350	2020 552 93645	39pF 5% 50V
2352	5322 126 10223	4.7nF 10% 63V
2356	4822 126 14585	100nF 10% 50V
2357	5322 121 42489	33nF 5% 250V
2360	5322 122 31863	330pF 5% 63V
2370	4822 124 11565	10µF 20% 250V
2372	4822 124 40784	3300µF 20% 16V
2374	5322 122 34098	10nF 10% 63V
2381	4822 126 13599	3.3nF 10% 500V
2382	4822 122 31177	470pF 10% 500V
2383	4822 124 41584	100µF 20% 10V
2384	4822 124 41584	100µF 20% 10V
2393	5322 122 32654	22nF 10% 63V
2397	4822 121 70594	1nF 5% 2kV
2398	4822 121 70383	6.8nF 5% 2kV
2410	2020 552 93683	1.2nF 10% 50V
2411	4822 124 40764	22µF 100V
2420	4822 126 14238	2.2nF 50V
2421	4822 126 14494	22nF 10% 25V
2422	2238 586 15628	2.7nF 10% 50V
2423	2238 586 15628	2.7nF 10% 50V
2424	4822 126 14494	22nF 10% 25V
2425	4822 126 14494	22nF 10% 25V
2426	4822 126 14494	22nF 10% 25V

2427	2020 552 93683	1.2nF 10% 50V
2428	4822 126 14238	2.2nF 50V
2429	4822 126 14494	22nF 10% 25V
2440	4822 126 14043	1µF 20% 16V
2475	4822 122 33761	22pF 5% 50V
2484	4822 122 33761	22pF 5% 50V
2485	4822 122 33761	22pF 5% 50V
2489	4822 122 33761	22pF 5% 50V

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3325	4822 051 20332	3k3 5% 0.1W
3329	4822 116 52283	4k7 5% 0.5W
3330	4822 051 30181	180Ω 5% 0.062W
3331	4822 117 12968	820Ω 5% 0.62W
3333	2120 105 93438	33k 2W
3334	4822 116 83881	390Ω 5% 0.5W
3335	4822 116 83872	220Ω 5% 0.5W
3336	4822 117 11373	100Ω 1%
3339	4822 051 10102	1k 2% 0.25W
3340	4822 051 30181	180Ω 5% 0.062W
3341	4822 117 12968	820Ω 5% 0.62W
3343	2120 105 93438	33k 2W
3344	4822 116 83881	390Ω 5% 0.5W
3345	4822 116 83872	220Ω 5% 0.5W
3346	4822 117 11373	100Ω 1%
3349	4822 051 10102	1k 2% 0.25W
3350	4822 051 30181	180Ω 5% 0.062W
3351	4822 117 12968	820Ω 5% 0.62W
3353	2120 105 93438	33k 2W
3354	4822 116 83881	390Ω 5% 0.5W
3355	4822 116 83872	220Ω 5% 0.5W
3356	4822 117 11373	100Ω 1%
3359	4822 051 10102	1k 2% 0.25W
3360	4822 050 11002	1k 1% 0.4W
3363	4822 051 20008	Jumper 0805
3364	4822 051 20008	Jumper 0805
3365	4822 117 12925	47k 1% 0.063W
3372	4822 052 10108	1Ω 5% 0.33W
3373	4822 052 10151	150Ω 5% 0.33W
3374	4822 052 10151	150Ω 5% 0.33W
3382	4822 116 52191	33Ω 5% 0.5W
3383	4822 117 13016	VDR 1mA/50V MAX 115V
3385	4822 117 13016	VDR 1mA/50V MAX 115V
3386	4822 116 52191	33Ω 5% 0.5W
3396	3198 013 01520	1k5 2% 0.5W
3397	3198 013 01520	1k5 2% 0.5W
3401	4822 051 30101	100Ω 5% 0.062W
3402	4822 051 30101	100Ω 5% 0.062W
3403	4822 051 30101	100Ω 5% 0.062W
3404	4822 116 52238	12k 5% 0.5W
3404	4822 116 52291	56k 5% 0.5W
3410	4822 117 12968	820Ω 5% 0.62W
3411	4822 117 13632	100k 1% 0.62W 0603
3413	4822 117 12968	820Ω 5% 0.62W
3414	4822 117 12077	2k7 5% 5W
3416	4822 117 13632	100k 1% 0.62W
3421	4822 051 30273	27k 5% 0.062W
3422	4822 116 52226	560Ω 5% 0.5W
3423	4822 051 30471	470Ω 5% 0.062W
3424	4822 117 10361	680Ω 1% 0.1W
3425	4822 051 10102	1k 2% 0.25W
3426	4822 051 30332	3k3 5% 0.062W
3427	4822 051 30561	560Ω 5% 0.062W
3431	4822 051 30273	27k 5% 0.062W
3433	4822 051 30471	470Ω 5% 0.062W
3434	4822 117 10361	680Ω 1% 0.1W
3435	4822 051 30102	1k 5% 0.062W
3436	4822 051 30332	3k3 5% 0.062W
3437	4822 051 30561	560Ω 5% 0.062W
3441	4822 051 30273	27k 5% 0.062W
3443	4822 051 30471	470Ω 5% 0.062W
3444	4822 117 10361	680Ω 1% 0.1W
3445	4822 051 10102	1k 2% 0.25W
3446	4822 051 30332	3k3 5% 0.062W
3447	4822 051 30561	560Ω 5% 0.062W
3448	4822 117 12968	820Ω 5% 0.62W
3450	4822 051 30102	1k 5% 0.062W
3451	4822 051 30689	68Ω 5% 0.063W
3452	4822 117 12925	47k 1% 0.063W
3453	4822 051 30392	3k9 5% 0.063W
3454	4822 117 12968	820Ω 5% 0.62W
3455	4822 051 30472	4k7 5% 0.062W
3456	4822 051 30181	180Ω 5% 0.062W
3460	3198 021 32250	2M2 5%
3462	3198 021 32250	2M2 5%
3463	3198 021 32250	2M2 5%
3468	3198 021 32250	2M2 5%
3470	4822 116 81154	2Ω2 5% 0.5W
3472	4822 116 81154	2Ω2 5% 0.5W
3473	4822 116 81154	2Ω2 5% 0.5W
3474	4822 051 30102	1k 5% 0.062W
3475	4822 117 12925	47k 1% 0.063W
3476	4822 051 30103	10k 5% 0.062W
3477	4822 051 30109	10Ω 5% 0.062W
3478	4822 116 81154	2Ω2 5% 0.5W
3483	4822 051 30102	1k 5% 0.062W
3484	4822 117 12925	47k 1% 0.063W
3485	4822 117 12925	47k 1% 0.063W
3487	4822 051 30103	10k 5% 0.062W
3488	4822 051 30109	10Ω 5% 0.062W
3489	4822 117 12925	47k 1% 0.063W
3492	4822 051 30101	100Ω 5% 0.062W
3493	4822 116 52191	33Ω 5% 0.5W
3494	4822 051 30101	100Ω 5% 0.062W
3495	4822 051 20479	47Ω 5% 0.1W
3999	4822 117 10353	150Ω 1% 0.1W
3999	4822 117 11503	220Ω 1% 0.1W
3999	4822 117 13577	330Ω 1% 1.25W
4xxx	4822 051 10008	Jumper 1206
4xxx	4822 051 20008	Jumper 0805

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5372	4822 157 51216	5.6µH 10%
5373	4822 157 51216	5.6µH 10%
5400	4822 157 11778	5.6µH 10%
5401	2722 122 00334	Del line 90nS SDL-5127
5402	2722 122 00334	Del line 90nS SDL-5127
5403	2722 122 00334	Del line 90nS SDL-5127

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6325	4822 130 10838	UDZ3.3B
6335	9340 553 52115	BAS321
6336	9340 553 52115	BAS321
6345	9340 553 52115	BAS321
6346	9340 553 52115	BAS321
6355	9340 553 52115	BAS321
6356	9340 553 52115	BAS321
6373	4822 130 42488	BYD33D
6374	4822 130 82512	BYV29F-400
6412	4822 130 11397	BAS316
6413	4822 130 11397	BAS316
6414	4822 130 11397	BAS316
6415	4822 130 11397	BAS316

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7330	9352 626 34112	TDA6120Q/N2
7340	9352 626 34112	TDA6120Q/N2
7350	9352 626 34112	TDA6120Q/N2
7412	4822 130 40824	BD140
7413	4822 130 40823	BD139
7414	4822 130 40824	BD140
7415	4822 130 40823	BD139
7416	4822 130 60511	BC847B
7417	4822 130 60373	BC856B
7418	4822 130 60511	BC847B
7419	4822 130 60373	BC856B
7420	4822 130 60511	BC847B
7421	4822 130 60373	BC856B
7422	5322 130 42718	BFS20
7423	4822 130 60511	BC847B
7424	5322 130 42718	BFS20
7425	5322 130 42718	BFS20
7426	4822 130 60373	BC856B
7427	4822 130 60511	BC847B
7428	4822 130 60373	BC856B
7431	4822 130 60383	BF824

DC-shift Panel [G]

Various

0393	2422 025 16218	5P male
0398	4822 267 11043	3P male

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2030	4822 122 31177	470pF 10% 500V
2031	4822 124 40207	100µF 20% 25V
2032	4822 124 40207	100µF 20% 25V
2033	4822 122 31177	470pF 10% 500V
2034	4822 121 42408	220nF 10% 50V

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3030	4822 117 12159	150Ω 5% 2W
3030	4822 053 11159	15Ω 5% 2W
3031	4822 052 10108	1Ω 5% 0.33W
3032	4822 052 10108	1Ω 5% 0.33W
3033	4822 053 11159	15Ω 5% 2W
3034	4822 116 83872	220Ω 5% 0.33W
3040	4822 053 11101	100Ω 5% 2W

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5030	4822 157 70006	DC-shift coil

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6030	4822 130 42488	BYD33D
6033	4822 130 42488	BYD33D

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7030	4822 130 41109	BD135-16
7031	4822 130 41194	BD136-16

DAF Panel [I]

Various

0001	3104 304 20301	DAF bracket
0317	4822 265 20723	3P male
0391	4822 267 10973	1P
0396	2422 025 16374	2P male
0397	4822 267 10774	2P male red
0398	4822 267 11043	3P male
1010	2322 460 91631	DAF potmeter 36" RF
1016	2322 460 91641	DAF potmeter 32" RF
8300	4822 320 20216	Focus cable 364 mm
8301	4822 320 20216	Focus cable 364 mm
8396	3104 311 01951	CableH 2P3/560mm/2P4

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2800	2222 375 90188	390pF 5% 2kV
2800	2222 375 90498	470pF 5% 2kV
2890	2222 375 90188	390pF 5% 2kV
2890	2222 375 90276	220pF 5% 2kV

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3050	4822 101 11191	10k 30% LIN 0.1W
3898	4822 116 21211	VDR 420V
3899	4822 116 21211	VDR 420V
3998	4822 116 52219	330Ω 5% 0.5W

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5800	4822 148 81242	Coil CU20C2

Small Signal Panel [K]

Various

0002	2422 486 80873	IC socket 42P DIL
0008	2422 486 80928	IC socket 8P DIL
0031	3104 304 22851	SSP bracket
0032	3104 304 19646	Module support bracket
0310	4822 267 10964	9P male red
0311	4822 267 10978	7P male black
0315	4822 267 10979	9P male black
0328	4822 267 10981	11P male black
0333	4822 267 10962	11P
0340	4822 267 10974	9P male
0341	4822 267 10974	9P male
0344	4822 267 10963	3P male
0348	4822 267 11043	3P
0351	4822 267 10962	11P male
0352	4822 267 10962	11P male
0353	4822 267 10974	9P male
0356	4822 267 10963	3P male
0360	4822 267 10967	3P male
0361	4822 267 10974	9P male
0362	4822 267 10974	9P male
0373	4822 267 10978	7P male
0375	4822 267 10676	1P
0381	4822 267 10963	3P male
1001	4822 242 10972	Crystal 6MHz
1101	3139 147 14591	Splitter PS1311/I
1102	3139 147 18831	Tuner UV1316/A I X-3
1102	3139 147 18841	Tuner UV1316/A P X-3
1105	4822 242 10688	Filter OFWK9456M
1107	4822 242 72211	Filter 5.5MHz
1109	4822 242 81436	Filter OFWK3953M
1198	3104 301 08351	Cable phono-phono 120mm
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1201	4822 267 10771	Socket 2 x scart
1202	4822 267 10771	Socket 2 x scart
1305	5322 242 73686	Crystal 12 MHz
1525	4822 242 10695	Crystal 4.433 619 MHz
1528	4822 242 10697	Crystal 3.579 545 MHz
1751	4822 242 10434	Crystal 18.432 MHz
8310	3104 301 08303	Cable 9P 680m red
8340	4822 320 12508	Cable 9P 400mm White
8360	3119 107 17071	Cable 3P 220mm Black
8382	3104 311 00340	Service cable 9P SSP-PTP

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2001	4822 126 14585	100nF 10% 50V
2002	4822 126 14305	100nF 10% 16V 0603
2003	4822 126 14305	100nF 10% 16V 0603
2005	4822 126 14305	100nF 10% 16V 0603
2006	4822 126 14305	100nF 10% 16V 0603
2007	4822 126 14305	100nF 10% 16V 0603
2008	4822 126 14305	100nF 10% 16V 0603
2009	4822 126 14305	100nF 10% 16V 0603
2010	4822 126 14305	100nF 10% 16V 0603
2011	4822 126 14305	100nF 10% 16V 0603
2012	4822 126 14305	100nF 10% 16V 0603
2013	4822 126 14076	220nF 20-80% 25V
2014	4822 126 11669	27pF
2015	4822 126 14585	100nF 10% 50V
2016	5322 122 32659	33pF 5% 50V
2021	4822 126 14585	100nF 10% 50V
2022	4822 126 14076	220nF 20-80% 25V
2023	4822 126 14305	100nF 10% 16V 0603
2024	5322 126 11578	1nF 10% 50V 0603
2025	4822 126 14305	100nF 10% 16V 0603
2026	4822 126 14305	100nF 10% 16V 0603
2027	4822 126 14305	100nF 10% 16V 0603
2028	4822 126 14305	100nF 10% 16V 0603
2029	4822 124 40433	47µF 20% 25V
2030	4822 124 40433	47µF 20% 25V
2031	4822 126 14305	100nF 10% 16V 0603
2032	4822 126 14305	100nF 10% 16V 0603
2035	4822 126 14585	100nF 10% 50V
2037	4822 126 14585	100nF 10% 50V
2038	4822 126 14585	100nF 10% 50V
2039	4822 126 13883	220pF 5% 50V
2040	4822 122 33177	10nF 20% 50V
2042	4822 122 33777	47pF 5% 63V
2043	4822 122 33777	47pF 5% 63V
2044	4822 122 33777	47pF 5% 63V
2045	4822 124 41584	100µF 20% 10V
2046	4822 126 14585	100nF 10% 50V
2049	4822 126 14226	82pF 5% 50V 0603
2050	4822 126 14226	82pF 5% 50V 0603
2051	4822 126 14226	82pF 5% 50V 0603
2052	4822 126 14226	82pF 5% 50V 0603
2053	4822 126 14226	82pF 5% 50V 0603
2054	4822 126 14226	82pF 5% 50V 0603
2101	4822 124 40196	220µF 20% 16V
2102	4822 126 13473	220nF 80-20% 50V
2104	4822 122 33177	10nF 20% 50V
2105	4822 122 33177	10nF 20% 50V
2106	4822 122 33575	220pF 5% 63V
2107	4822 126 13694	68pF 1% 63V
2108	5322 122 31873	2.7pF 5% 100V
2109	4822 124 22652	2.2µF 20% 50V
2110	4822 124 21913	1µF 20% 63V
2111	4822 126 14585	100nF 10% 50V
2112	4822 122 33891	3.3nF 10% 63V
2116	4822 124 81044	470µF 20% 6.3V
2117	4822 126 13482	470nF 80/20% 16V
2118	5322 122 32967	5.6pF 10% 63V
2119	5322 122 31863	330pF 5% 63V
2120	4822 126 14076	220nF 20-80% 25V
2121	4822 124 40248	10µF 20% 63V
2125	4822 122 33177	10nF 20% 50V
2126	4822 124 40433	47µF 20% 25V
2127	4822 126 14076	220nF 20-80% 25V
2202	5322 122 31863	330pF 5% 63V
2203	5322 122 31863	330pF 5% 63V
2204	4822 126 14305	100nF 10% 16V 0603
2205	4822 124 40248	10µF 20% 63V
2206	5322 122 32531	100pF 5% 50V
2209	5322 122 31863	330pF 5% 63V
2210	5322 122 32531	100pF 5% 50V
2212	4822 124 40248	10µF 20% 63V
2213	4822 126 14305	100nF 10% 16V 0603
2215	5322 122 31863	330pF 5% 63V
2216	5322 122 31863	330pF 5% 63V
2217	5322 122 32531	100pF 5% 50V
2218	5322 122 31647	1nF 10% 63V
2219	5322 122 31863	330pF 5% 63V
2220	5322 122 32531	100pF 5% 50V
2221	4822 126 14076	220nF 20-80% 25V
2222	4822 124 81286	47µF 20% 16V
2224	5322 122 32531	100pF 5% 50V
2226	5322 122 32531	100pF 5% 50V
2240	5322 122 32531	100pF 5% 50V
2241	5322 122 32531	100pF 5% 50V
2242	4822 124 23002	10µF 16V
2243	4822 126 14076	220nF 20-80% 25V
2244	4822 126 14076	220nF 20-80% 25V
2245	4822 126 14076	220nF 20-80% 25V
2246	4822 126 14076	220nF 20-80% 25V
2247	4822 126 14076	220nF 20-80% 25V
2248	4822 126 14076	220nF 20-80% 25V
2249	4822 126 14076	220nF 20-80% 25V
2250	4822 126 14076	220nF 20-80% 25V
2251	4822 124 80151	47µF 16V
2258	4822 126 14076	220nF 20-80% 25V
2300	4822 124 40196	220µF 20% 16V
2301	4822 126 14585	100nF 10% 50V
2302	4822 126 14585	100nF 10% 50V
2303	4822 124 22652	2.2µF 20% 50V
2304	4822 126 14305	100nF 10% 16V 0603
2307	4822 122 33741	10pF 10% 50V
2308	4822 122 33741	10pF 10% 50V
2311	4822 124 40196	220µF 20% 16V
2312	4822 126 14305	100nF 10% 16V 0603
2313	4822 126 13694	68pF 1% 63V
2315	5322 122 34098	10nF 10% 63V
2321	4822 126 13881	470pF 5% 50V
2322	4822 126 13881	470pF 5% 50V
2323	4822 121 70661	100nF 5% 63V
2324	2222 396 05333	33nF 5% 50V
2331	5322 126 11583	10nF 10% 50V 0603
2340	4822 126 13881	470pF 5% 50V
2343	5322 122 32448	10pF 5% 63V
2344	4822 126 14305	100nF 10% 16V 0603
2351	2020 552 96326	220nF 10% 16V
2403	4822 126 14585	100nF 10% 50V
2404	4822 126 14585	100nF 10% 50V
2405	4822 126 14585	100nF 10% 50V
2406	4822 126 14305	100nF 10% 16V 0603
2407	4822 126 14305	100nF 10% 16V 0603
2408	4822 126 14305	100nF 10% 16V 0603
2422	4822 124 22652	2.2µF 20% 50V
2423	4822 124 40769	4.7µF 20% 100V
2425	4822 122 33761	22pF 5% 50V
2427	5322 126 10511	1nF 5% 50V
2436	4822 124 80151	47µF 16V
2501	4822 126 14305	100nF 10% 16V 0603
2502	4822 126 14305	100nF 10% 16V 0603
2503	4822 126 14305	100nF 10% 16V 0603
2504	4822 126 14305	100nF 10% 16V 0603
2505	4822 126 14305	100nF 10% 16V 0603
2506	4822 126 14305	100nF 10% 16V 0603
2507	4822 126 14305	100nF 10% 16V 0603
2508	4822 126 14305	100nF 10% 16V 0603
2509	4822 126 14305	100nF 10% 16V 0603
2510	4822 126 14305	100nF 10% 16V 0603
2511	4822 126 14305	100nF 10% 16V 0603
2512	4822 126 14305	100nF 10% 16V 0603
2520	4822 126 14305	100nF 10% 16V 0603
2521	4822 126 14305	100nF 10% 16V 0603
2522	5322 126 11579	3.3nF 10% 63V
2525	4822 126 14507	18pF 5% 50V 0603
2528	4822 122 33752	15pF 5% 50V
2532	4822 126 14043	1µF 20% 16V
2534	5322 126 10223	4.7nF 10% 63V
2535	4822 126 14491	2.2µF 10V
2536	4822 126 14585	100nF 10% 50V
2537	4822 126 14585	100nF 10% 50V
2538	4822 124 40433	47µF 20% 25V
2539	4822 126 14305	100nF 10% 16V 0603
2540	4822 124 40433	47µF 20% 25V
2541	5322 122 32654	22nF 10% 63V
2545	4822 126 14305	100nF 10% 16V 0603
2550	4822 126 14305	100nF 10% 16V 0603
2553	4822 126 14585	100nF 10% 50V
2554	4822 126 14585	100nF 10% 50V
2555	4822 126 14305	100nF 10% 16V 0603
2556	4822 126 14305	100nF 10% 16V 0603
2557	4822 126 14305	100nF 10% 16V 0603
2558	4822 126 14305	100nF 10% 16V 0603
2559	4822 124 40207	100µF 20% 25V
2560	4822 126 14305	100nF 10% 16V 0603
2561	4822 124 81286	47µF 20% 16V
2562	4822 126 14305	100nF 10% 16V 0603
2564	4822 122 33177	10nF 20% 50V
2567	5322 126 10733	680pF 5% 50V
2568	4822 122 31765	100pF 2% 63V
2569	4822 122 33177	10nF 20% 50V
2570	4822 122 31765	100pF 2% 63V
2751	4822 126 14305	100nF 10% 16V 0603
2752	4822 126 13692	47pF 1% 63V
2753	4822 122 32927	220nF 20% 50V
2754	5322 122 32268	470pF 5% 63V
2755	5322 122 32268	470pF 5% 63V
2756	5322 122 32268	470pF 5% 63V
2757	5322 122 32268	470pF 5% 63V
2758	5322 122 32268	470pF 5% 63V
2759	5322 122 32268	470pF 5% 63V
2760	5322 122 32268	470pF 5% 63V
2761	4822 122 32927	220nF 20% 50V
2762	4822 122 32927	220nF 20% 50V
2763	5322 122 32268	470pF 5% 63V
2764	5322 122 32268	470pF 5% 63V
2765	4822 124 12095	100µF 20% 16V
2766	4822 124 12095	100µF 20% 16V
2767	5322 122 32286	3.3pF 5% 50V
2768	5322 122 32286	3.3pF 5% 50V
2773	5322 122 31647	1nF 10% 63V
2774	5322 122 31647	1nF 10% 63V
2777	4822 124 23002	10µF 16V
2778	4822 124 23002	10µF 16V
2779	4822 126 14585	100nF 10% 50V
2780	4822 124 23002	10µF 16V
2781	4822 126 14585	100nF 10% 50V
2782	4822 124 23002	10µF 16V
2783	4822 126 13482	470nF 80/20% 16V
2784	4822 126 13482	470nF 80/20% 16V
2785	5322 122 31647	1nF 10% 63V
2786	5322 122 31647	1nF 10% 63V
2787	5322 126 10223	4.7nF 10% 63V
2788	5322 126 10223	4.7nF 10% 63V
2790	4822 122 33761	22pF 5% 50V
2791	4822 122 33761	22pF 5% 50V
2792	5322 126 11583	10nF 10% 50V 0603
2793	4822 122 33177	10nF 20% 50V
2801	4822 122 33761	22pF 5% 50V
2802	4822 124 12398	4.7µF 20% 25V
2803	4822 124 12398	4.7µF 20% 25V
2804	4822 122 32927	220nF 20% 50V
2805	4822 122 32927	220nF 20% 50V
2808	4822 124 12095	100µF 20% 16V
2809	5322 126 10511	1nF 5% 50V
2810	5322 126 10511	1nF 5% 50V
2811	5322 126 10511	1nF 5% 50V
2842	4822 124 23002	10µF 16V
2843	4822 126 14491	2.2µF 10V
2846	4822 124 23002	10µF 16V
2847	4822 124 23002	10µF 16V
2848	4822 124 23002	10µF 16V
2849	4822 124 23002	10µF 16V
2852	4822 122 32927	220nF 20% 50V
2853	4822 122 32927	220nF 20% 50V
2854	4822 122 32927	220nF 20% 50V
2855	4822 122 32927	220nF 20% 50V
2856	4822 122 32927	220nF 20% 50V
2857	4822 122 32927	220nF 20% 50V
2858	4822 122 32927	220nF 20% 50V
2859	4822 122 32927	220nF 20% 50V
2860	4822 122 32927	220nF 20% 50V
2861	4822 122 32927	220nF 20% 50V
2864	4822 124 81151	22µF 50V
2869	4822 124 40196	220µF 20% 16V
2870	4822 122 32927	220nF 20% 50V
2871	4822 122 32927	220nF 20% 50V
2872	4822 124 40207	100µF 20% 25V
2873	5322 126 10511	1nF 5% 50V
2890	4822 122 33177	10nF 20% 50V
2891	4822 126 14585	100nF 10% 50V
2897	4822 126 14305	100nF 10% 16V 0603

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3001	2322 704 66201	620Ω 1% 0.062W
3003	3198 031 14710	4X470Ω 5% 0.63W network
3004	3198 031 14710	4X470Ω 5% 0.63W network
3005	3198 031 14710	4X470Ω 5% 0.63W network
3006	4822 051 30103	10k 5% 0.062W
3007	4822 051 30103	10k 5% 0.062W
3009	3198 031 14710	4X470Ω 5% 0.63W network
3010	4822 051 30103	10k 5% 0.062W
3011	4822 051 30472	4k7 5% 0.062W
3023	3198 031 14710	4X470Ω 5% 0.63W network
3024	4822 051 30471	470Ω 5% 0.062W
3027	3198 031 14710	4X470Ω 5% 0.63W network
3028	3198 031 14710	4X470Ω 5% 0.63W network
3029	4822 051 30471	470Ω 5% 0.062W
3030	3198 031 11010	4X100Ω 5% 0.63W network
3031	4822 117 13577	330Ω 1% 1.25W
3032	4822 051 30471	470Ω 5% 0.062W
3033	4822 117 13523	220Ω 5% RESN 0.63W
3034	4822 051 30103	10k 5% 0.062W
3035	4822 051 30103	10k 5% 0.062W
3036	4822 117 13524	2.2k 5% 0.63W
3039	4822 051 30333	33k 5% 0.062W
3041	4822 117 10833	10k 1% 0.1W
3042	4822 051 20474	470k 5% 0.1W
3043	4822 051 30472	4k7 5% 0.062W

3045	4822 051 20273	27k 5% 0.1W
3047	4822 117 13525	24k 1% 0.62W 0603
3048	4822 117 13526	150Ω 5% 0.63W
3059	4822 051 30331	330Ω 5% 0.062W
3062	4822 117 12925	47k 1% 0.063W 0603
3063	4822 051 30472	4k7 5% 0.062W
3066	4822 117 10833	10k 1% 0.1W
3067	4822 051 30472	4k7 5% 0.062W
3068	4822 051 30103	10k 5% 0.062W
3069	4822 051 30689	68Ω 5% 0.063W 0603
3070	4822 051 30103	10k 5% 0.062W
3071	4822 051 30472	4k7 5% 0.062W
3072	4822 117 10834	47k 1% 0.1W
3073	4822 051 20472	4k7 5% 0.1W
3075	4822 051 30472	4k7 5% 0.062W
3076	4822 051 30472	4k7 5% 0.062W
3080	3198 031 11010	4X100Ω 5% 0.63W network
3086	4822 051 30101	100Ω 5% 0.062W
3090	3198 031 11010	4X100Ω 5% 0.63W network
3091	3198 031 11010	4X100Ω 5% 0.63W network
3092	3198 031 11010	4X100Ω 5% 0.63W network
3093	3198 031 11010	4X100Ω 5% 0.63W network
3094	3198 031 11010	4X100Ω 5% 0.63W network
3095	3198 031 11010	4X100Ω 5% 0.63W network
3096	3198 031 11010	4X100Ω 5% 0.63W network
3097	3198 031 11010	4X100Ω 5% 0.63W network
3098	3198 031 11010	4X100Ω 5% 0.63W network
3099	3198 031 11010	4X100Ω 5% 0.63W network
3102	4822 117 10833	10k 1% 0.1W
3103	4822 051 20008	Jumper 0805
3104	4822 051 20008	Jumper 0805
3106	4822 051 20479	47Ω 5% 0.1W
3110	4822 117 11449	2k2 5% 0.1W 0805
3111	4822 117 11449	2k2 5% 0.1W 0805
3112	4822 051 20472	4k7 5% 0.1W
3114	4822 051 20472	4k7 5% 0.1W
3118	4822 051 20391	390Ω 5% 0.1W
3119	4822 051 20479	47Ω 5% 0.1W
3124	4822 051 30101	100Ω 5% 0.062W
3133	4822 117 12955	2k7 1% 0.1W 0805
3135	4822 051 20472	4k7 5% 0.1W
3136	4822 117 11503	220Ω 1% 0.1W
3137	4822 051 10102	1k 2% 0.25W
3138	4822 117 11448	180Ω 1% 0.1W
3139	4822 117 11139	1k5 1% 0.1W
3140	4822 116 83933	15k 1% 0.1W
3141	4822 051 30333	33k 5% 0.062W
3142	4822 051 30102	1k 5% 0.062W
3143	4822 051 30102	1k 5% 0.062W
3145	4822 051 30101	100Ω 5% 0.062W
3146	4822 051 20223	22k 5% 0.1W
3147	4822 052 10109	10Ω 5% 0.33W
3152	4822 051 20471	470Ω 5% 0.1W
3153	4822 051 10102	1k 2% 0.25W
3154	4822 117 11503	220Ω 1% 0.1W
3155	4822 117 11503	220Ω 1% 0.1W
3200	4822 117 10353	150Ω 1% 0.1W
3201	4822 117 10353	150Ω 1% 0.1W
3202	4822 117 10353	150Ω 1% 0.1W
3203	4822 117 10353	150Ω 1% 0.1W
3204	4822 052 10688	6Ω8 5% 0.33W
3205	4822 051 20471	470Ω 5% 0.1W
3206	4822 117 12521	68Ω 1% 0.1W
3207	4822 051 20561	560Ω 5% 0.1W
3208	4822 051 20399	39Ω 5% 0.1W
3209	4822 117 11927	75Ω 1% 0.1W
3210	4822 117 11927	75Ω 1% 0.1W
3211	4822 117 11927	75Ω 1% 0.1W
3212	4822 051 20399	39Ω 5% 0.1W
3213	4822 117 11927	75Ω 1% 0.1W
3215	4822 117 11927	75Ω 1% 0.1W
3216	4822 051 20822	8k2 5% 0.1W
3218	4822 051 20392	3k9 5% 0.1W
3219	4822 051 10102	1k 2% 0.25W
3220	4822 051 10102	1k 2% 0.25W
3221	4822 117 10353	150Ω 1% 0.1W
3222	4822 117 10353	150Ω 1% 0.1W
3223	4822 117 10353	150Ω 1% 0.1W
3224	4822 117 10353	150Ω 1% 0.1W
3225	4822 052 10688	6Ω8 5% 0.33W
3227	4822 051 20399	39Ω 5% 0.1W
3228	4822 051 30101	100Ω 5% 0.062W
3229	4822 051 30103	10k 5% 0.062W
3230	4822 051 20561	560Ω 5% 0.1W
3231	4822 051 20399	39Ω 5% 0.1W
3232	4822 117 12521	68Ω 1% 0.1W
3235	4822 117 10353	150Ω 1% 0.1W
3236	4822 117 11927	75Ω 1% 0.1W
3240	4822 117 11927	75Ω 1% 0.1W
3241	4822 117 10353	150Ω 1% 0.1W
3242	4822 051 20822	8k2 5% 0.1W
3243	4822 117 10353	150Ω 1% 0.1W
3244	4822 051 10102	1k 2% 0.25W
3245	4822 051 20392	3k9 5% 0.1W
3246	4822 051 10102	1k 2% 0.25W
3248	4822 117 13577	330Ω 1% 1.25W
3249	4822 117 12955	2k7 1% 0.1W 0805
3250	4822 117 11139	1k5 1% 0.1W
3252	4822 051 20339	33Ω 5% 0.1W
3253	4822 051 20391	390Ω 5% 0.1W
3254	4822 051 10102	1k 2% 0.25W
3255	4822 051 10102	1k 2% 0.25W
3256	4822 117 11927	75Ω 1% 0.1W
3259	4822 051 30273	27k 5% 0.062W
3262	4822 117 12925	47k 1% 0.063W 0603
3263	4822 051 30221	220Ω 5% 0.062W
3264	4822 051 20822	8k2 5% 0.1W
3265	4822 117 12955	2k7 1% 0.1W 0805
3266	4822 117 10833	10k 1% 0.1W
3269	4822 051 30561	560Ω 5% 0.062W
3270	4822 051 10102	1k 2% 0.25W
3271	4822 051 10102	1k 2% 0.25W
3273	4822 051 20822	8k2 5% 0.1W
3274	4822 117 12955	2k7 1% 0.1W 0805
3275	4822 051 30339	33Ω 5% 0.062W
3276	4822 051 30391	390Ω 5% 0.062W
3277	4822 051 30222	2k2 5% 0.062W
3278	4822 051 30331	330Ω 5% 0.062W
3279	4822 051 30151	150Ω 5% 0.062W
3281	4822 117 12903	1k8 1% 0.063W 0603
3282	4822 117 13632	100k 1% 0.62W 0603
3283	4822 051 30683	68k 5% 0.062W
3284	4822 117 13632	100k 1% 0.62W 0603
3285	4822 051 30683	68k 5% 0.062W
3286	4822 117 13632	100k 1% 0.62W 0603
3287	4822 051 30683	68k 5% 0.062W
3288	4822 051 30101	100Ω 5% 0.062W
3289	4822 051 30101	100Ω 5% 0.062W
3290	4822 052 10478	4Ω7 5% 0.33W
3291	4822 051 30561	560Ω 5% 0.062W
3292	4822 051 30103	10k 5% 0.062W
3293	4822 051 30471	470Ω 5% 0.062W
3294	4822 051 30103	10k 5% 0.062W
3295	4822 051 30471	470Ω 5% 0.062W
3296	4822 051 30103	10k 5% 0.062W
3297	4822 051 30103	10k 5% 0.062W
3298	4822 117 13632	100k 1% 0.62W 0603
3299	4822 051 30683	68k 5% 0.062W
3300	4822 052 10688	6Ω8 5% 0.33W
3302	4822 051 30101	100Ω 5% 0.062W
3303	4822 051 30101	100Ω 5% 0.062W
3304	4822 051 30101	100Ω 5% 0.062W
3307	4822 051 30102	1k 5% 0.062W
3308	4822 051 30102	1k 5% 0.062W
3309	4822 051 30333	33k 5% 0.062W
3310	4822 051 20332	3k3 5% 0.1W
3311	4822 051 30102	1k 5% 0.062W
3312	4822 117 13632	100k 1% 0.62W 0603
3315	4822 051 20182	1k8 5% 0.1W
3316	4822 051 10102	1k 2% 0.25W
3317	4822 051 30102	1k 5% 0.062W
3318	4822 051 30102	1k 5% 0.062W
3320	4822 051 30102	1k 5% 0.062W
3321	4822 051 30102	1k 5% 0.062W
3322	4822 051 30102	1k 5% 0.062W
3323	4822 051 20393	39k 5% 0.1W
3325	4822 051 30102	1k 5% 0.062W
3326	4822 051 30221	220Ω 5% 0.062W
3330	4822 051 30684	680k 5% 0.062W
3331	4822 117 12925	47k 1% 0.063W 0603
3332	4822 051 30183	18k 5% 0.062W
3340	4822 051 30123	12k 5% 0.062W
3341	4822 051 10102	1k 2% 0.25W
3342	4822 051 30103	10k 5% 0.062W
3343	4822 117 10837	100k 1% 0.1W
3344	4822 051 30103	10k 5% 0.062W
3350	4822 051 30474	470k 5% 0.062W
3351	4822 117 12891	220k 1%
3352	4822 051 30332	3k3 5% 0.062W
3353	4822 117 12903	1k8 1% 0.063W 0603
3369	4822 051 30103	10k 5% 0.062W
3370	4822 051 30103	10k 5% 0.062W
3400	4822 117 11454	820Ω 1% 0.1W
3401	4822 117 11454	820Ω 1% 0.1W
3402	4822 117 11454	820Ω 1% 0.1W
3404	4822 051 20479	47Ω 5% 0.1W
3405	4822 051 20479	47Ω 5% 0.1W
3406	4822 051 20479	47Ω 5% 0.1W
3407	4822 117 10361	680Ω 1% 0.1W
3408	4822 117 10361	680Ω 1% 0.1W
3409	4822 117 10361	680Ω 1% 0.1W
3420	4822 117 12925	47k 1% 0.063W 0603
3422	4822 117 11449	2k2 5% 0.1W 0805
3423	4822 051 20008	Jumper 0805
3426	4822 051 30333	33k 5% 0.062W
3427	4822 051 30154	150k 5% 0.062W
3428	4822 051 30222	2k2 5% 0.062W
3429	4822 051 30181	180Ω 5% 0.062W
3439	4822 117 10833	10k 1% 0.1W
3440	4822 051 20393	39k 5% 0.1W
3441	4822 117 10833	10k 1% 0.1W
3454	4822 051 20008	Jumper 0805
3460	4822 051 30103	10k 5% 0.062W
3461	4822 051 30223	22k 5% 0.062W
3521	4822 117 13632	100k 1% 0.62W 0603
3530	4822 051 30101	100Ω 5% 0.062W
3531	4822 051 30101	100Ω 5% 0.062W
3532	4822 116 83933	15k 1% 0.1W
3538	4822 052 10228	2Ω2 5% 0.33W
3545	4822 051 30471	470Ω 5% 0.062W
3546	4822 051 30471	470Ω 5% 0.062W
3551	4822 051 30271	270Ω 5% 0.062W
3554	4822 051 10102	1k 2% 0.25W
3556	4822 117 10833	10k 1% 0.1W
3557	4822 051 30479	47Ω 5% 0.062W
3558	4822 051 20105	1M 5% 0.1W
3565	4822 051 30101	100Ω 5% 0.062W
3566	4822 051 30101	100Ω 5% 0.062W
3567	4822 117 11373	100Ω 1% 0805
3568	4822 051 20471	470Ω 5% 0.1W
3569	4822 051 30479	47Ω 5% 0.062W
3570	3198 031 11010	4X100Ω 5% 0.63W network
3583	4822 051 30101	100Ω 5% 0.062W
3584	4822 051 30471	470Ω 5% 0.062W
3585	4822 051 30479	47Ω 5% 0.062W
3590	4822 117 11454	820Ω 1% 0.1W
3750	4822 052 10228	2Ω2 5% 0.33W
3751	4822 051 30223	22k 5% 0.062W
3752	4822 051 30223	22k 5% 0.062W
3753	4822 051 30682	6k8 5% 0.062W
3754	4822 051 30682	6k8 5% 0.062W
3755	4822 051 30101	100Ω 5% 0.062W
3756	4822 051 30101	100Ω 5% 0.062W
3762	4822 051 20472	4k7 5% 0.1W
3765	4822 051 30683	68k 5% 0.062W
3766	4822 051 30103	10k 5% 0.062W
3767	4822 051 30683	68k 5% 0.062W
3768	4822 051 30103	10k 5% 0.062W
3769	4822 117 11507	6k8 1% 0.1W
3770	4822 117 11507	6k8 1% 0.1W
3771	4822 116 83933	15k 1% 0.1W
3772	4822 116 83933	15k 1% 0.1W
3773	4822 051 20472	4k7 5% 0.1W
3781	4822 051 30561	560Ω 5% 0.062W
3783	4822 117 11373	100Ω 1% 0805
3784	4822 051 30008	Jumper 0603
3785	4822 051 30008	Jumper 0603
3796	4822 051 20121	120Ω 5% 0.1W
3797	4822 051 20121	120Ω 5% 0.1W
3798	4822 117 10834	47k 1% 0.1W
3799	4822 117 12925	47k 1% 0.063W 0603
3800	4822 051 30682	6k8 5% 0.062W
3801	4822 051 30103	10k 5% 0.062W
3802	4822 117 12891	220k 1%
3828	4822 051 30008	Jumper 0603
3829	4822 051 30008	Jumper 0603
3830	4822 051 20121	120Ω 5% 0.1W
3831	4822 051 20121	120Ω 5% 0.1W
3832	4822 051 10102	1k 2% 0.25W
3833	4822 051 30103	10k 5% 0.062W
3840	4822 051 30103	10k 5% 0.062W
3846	4822 117 12925	47k 1% 0.063W 0603
3847	4822 117 12925	47k 1% 0.063W 0603
3850	4822 051 20332	3k3 5% 0.1W
3851	4822 051 20332	3k3 5% 0.1W
3852	4822 051 30223	22k 5% 0.062W
3853	4822 051 30223	22k 5% 0.062W
3854	4822 117 10833	10k 1% 0.1W
3855	4822 117 10833	10k 1% 0.1W
3856	4822 117 10833	10k 1% 0.1W
3857	4822 117 10833	10k 1% 0.1W
3858	4822 117 10833	10k 1% 0.1W
3859	4822 117 10833	10k 1% 0.1W
3860	4822 117 10833	10k 1% 0.1W
3861	4822 117 10833	10k 1% 0.1W
3862	4822 117 11507	6k8 1% 0.1W
3864	4822 051 20223	22k 5% 0.1W
3865	4822 051 20223	22k 5% 0.1W
3866	4822 117 11373	100Ω 1% 0805
3867	4822 117 11373	100Ω 1% 0805
3877	4822 051 20332	3k3 5% 0.1W
3878	4822 051 20332	3k3 5% 0.1W
3879	4822 051 20332	3k3 5% 0.1W
3880	4822 051 20332	3k3 5% 0.1W
3881	4822 051 20332	3k3 5% 0.1W
3882	4822 051 20332	3k3 5% 0.1W
3883	4822 051 20822	8k2 5% 0.1W
3884	4822 117 11507	6k8 1% 0.1W
3885	4822 117 11148	56k 1% 0.1W
3886	4822 051 20393	39k 5% 0.1W
3887	4822 117 11373	100Ω 1% 0805
3888	4822 051 20562	5k6 5% 0.1W 0805

3895	4822 051 30103	10k 5% 0.062W
3899	4822 051 20008	Jumper 0805
4xxx	4822 051 10008	Jumper 1206
4xxx	4822 051 20008	Jumper 0805

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5002	4822 157 11775	6.8µH 5%
5101	4822 157 11775	6.8µH 5%
5102	4822 157 71303	0.39µH 10%
5103	4822 157 11776	Coil var. 40.4MHz
5106	4822 157 10977	4.7µH 10%
5108	2422 549 44811	Coil var.78MHz
5301	4822 157 11876	6.8µH 10% 0805
5302	4822 157 11876	6.8µH 10% 0805
5305	4822 051 20008	Jumper 0805
5306	4822 051 20008	Jumper 0805
5307	4822 051 20008	Jumper 0805
5501	4822 157 11775	6.8µH 5% 5X3
5502	4822 157 11775	6.8µH 5% 5X3
5540	4822 157 71304	1µH
5559	4822 157 11775	6.8µH 5% 5X3
5560	4822 157 11775	6.8µH 5% 5X3
5562	4822 157 11775	6.8µH 5% 5X3
5751	4822 157 11775	6.8µH 5% 5X3
5752	4822 157 11775	6.8µH 5% 5X3
5753	4822 157 11775	6.8µH 5% 5X3
5757	4822 157 11876	6.8µH 10% 0805
5759	4822 157 70503	4.7µH

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6001	4822 130 11422	PLVA2650A
6002	4822 130 11422	PLVA2650A
6003	4822 130 11422	PLVA2650A
6004	4822 130 11422	PLVA2650A
6006	4822 130 11422	PLVA2650A
6008	4822 130 11422	PLVA2650A
6009	4822 130 11422	PLVA2650A
6012	4822 130 11422	PLVA2650A
6013	4822 130 11422	PLVA2650A
6017	4822 130 11422	PLVA2650A
6019	4822 130 11422	PLVA2650A
6021	4822 130 11422	PLVA2650A
6023	4822 130 11422	PLVA2650A
6025	4822 130 11423	PLVA2656A
6026	4822 130 11423	PLVA2656A
6037	9322 129 34685	BZM55-C3V9
6039	4822 130 83757	MCL4148
6040	9322 129 37685	BZM55-C5V6
6101	9322 149 10685	BZM55-C33
6103	4822 130 11525	1SS356
6104	4822 130 11525	1SS356
6106	4822 130 83757	MCL4148
6107	4822 130 83757	MCL4148
6200	9322 129 40685	BZM55-C10
6201	9322 129 38685	BZM55-C6V8
6202	9322 129 40685	BZM55-C10
6203	9322 129 40685	BZM55-C10
6204	9322 129 38685	BZM55-C6V8
6205	9322 129 40685	BZM55-C10
6206	9322 129 40685	BZM55-C10
6207	9322 129 38685	BZM55-C6V8
6208	9322 129 40685	BZM55-C10
6209	9322 129 40685	BZM55-C10
6210	9322 129 38685	BZM55-C6V8
6211	9322 129 38685	BZM55-C6V8
6212	9322 129 38685	BZM55-C6V8
6213	9322 129 38685	BZM55-C6V8
6214	9322 129 40685	BZM55-C10
6215	9322 129 40685	BZM55-C10
6216	9322 129 40685	BZM55-C10
6217	9322 129 40685	BZM55-C10
6218	9340 548 61115	PDZ12B
6219	9322 129 38685	BZM55-C6V8
6220	9322 129 40685	BZM55-C10
6221	9322 129 40685	BZM55-C10
6222	9322 129 38685	BZM55-C6V8
6223	9322 129 40685	BZM55-C10
6224	9322 129 40685	BZM55-C10
6225	9322 129 38685	BZM55-C6V8
6226	9322 129 38685	BZM55-C6V8
6227	9322 129 38685	BZM55-C6V8
6228	9322 129 38685	BZM55-C6V8
6229	9322 129 40685	BZM55-C10
6230	9322 129 40685	BZM55-C10
6231	9322 129 40685	BZM55-C10
6232	9322 129 40685	BZM55-C10
6233	9322 129 38685	BZM55-C6V8
6238	4822 130 11528	1PS76SB10
6240	9322 129 40685	BZM55-C10
6241	9322 129 40685	BZM55-C10
6242	9322 129 40685	BZM55-C10
6243	9322 129 40685	BZM55-C10
6244	9322 129 38685	BZM55-C6V8
6250	4822 130 11528	1PS76SB10
6340	4822 130 83757	MCL4148
6341	4822 130 11594	BZX284-C47
6344	4822 130 83757	MCL4148
6350	4822 130 82346	BZV55-C27
6420	9322 129 37685	BZM55-C5V6
6422	4822 130 83757	MCL4148
6424	4822 130 83757	MCL4148
6429	9322 129 37685	BZM55-C5V6
6430	4822 130 83757	MCL4148
6431	4822 130 83757	MCL4148
6750	4822 051 20008	Jumper 0805
6751	9322 129 40685	BZM55-C10
6752	9322 129 40685	BZM55-C10
6755	9322 129 40685	BZM55-C10
6756	9322 129 40685	BZM55-C10
6757	4822 051 20008	Jumper 0805
6759	4822 130 83757	MCL4148

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7001	9322 157 20668	MSM51V18165F-60J
7002	4822 816 11247	M27V160-100B1
7003	9352 629 88557	SAA5801H/011
7006	4822 130 60373	BC856B
7007	4822 130 60511	BC847B
7008	4822 209 16977	M24C32-WBN6
7009	4822 209 16978	LF33CV
7010	4822 209 73852	PMBT2369
7011	4822 130 11155	PDTC114ET
7012	3198 010 44010	PDTA114ET
7013	9322 149 03668	M29W400BT-90M1
7014	4822 130 60511	BC847B
7015	4822 130 60373	BC856B
7016	4822 130 60511	BC847B
7019	4822 130 10255	MUN2213
7103	4822 130 60511	BC847B
7104	4822 130 60511	BC847B
7107	4822 130 60373	BC856B
7111	4822 130 60511	BC847B
7112	4822 130 60511	BC847B
7113	4822 209 72042	L78L05ACZ
7200	4822 130 40959	BC547B
7201	4822 130 40959	BC547B
7203	4822 130 44568	BC557B
7204	4822 130 60511	BC847B
7205	4822 130 60511	BC847B
7206	4822 130 60511	BC847B
7207	4822 130 60373	BC856B
7208	9322 105 08668	TEA6415CD
7216	4822 130 60511	BC847B
7300	9352 625 23518	TDA9330H/N2
7341	4822 130 60373	BC856B
7351	4822 130 60373	BC856B
7417	4822 130 10255	MUN2213
7418	4822 130 60373	BC856B
7419	4822 130 60373	BC856B
7420	4822 130 60373	BC856B
7424	4822 130 60373	BC856B
7501	9352 625 24518	TDA9321H/N2
7502	4822 130 60511	BC847B
7555	4822 130 60373	BC856B
7560	4822 209 12998	SAA4961/V3/S1
7561	4822 130 60511	BC847B
7575	4822 130 60511	BC847B
7701	4822 130 60511	BC847B
7751	9322 148 35668	MSP3410D-PS-C5
7752	5322 209 11102	HEF4052BT
7753	5322 209 11102	HEF4052BT
7757	4822 209 31378	NJM4556MB
7773	4822 130 60511	BC847B
7774	4822 130 60511	BC847B
7777	9322 116 87668	TEA6422D

Feature Box [L]

Various

0025	3104 301 23824	FBX-shield top
0026	3104 301 23834	FBX-shield botom
0361	2422 025 15389	9P male
0362	2422 025 15389	9P male
1701	4822 242 10685	Crystal 12MHz

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2701	4822 126 11663	12pF
2704	4822 126 11663	12pF
2707	4822 126 11663	12pF
2709	4822 126 14305	100nF 10% 16V 0603
2710	4822 124 80791	470µF 16V 20%
2712	4822 126 13881	470pF 5% 50V
2713	4822 122 33761	22pF 5% 50V
2714	4822 122 33761	22pF 5% 50V
2718	4822 122 33752	15pF 5% 50V
2719	4822 122 33752	15pF 5% 50V
2720	4822 122 33752	15pF 5% 50V
2721	4822 122 31765	100pF 2% 63V
2722	4822 122 31765	100pF 2% 63V
2723	4822 126 14225	56pF 5% 50V 0603
2724	4822 126 14225	56pF 5% 50V 0603
2725	4822 124 40248	10µF 20% 63V
2726	4822 126 14305	100nF 10% 16V 0603
2727	4822 124 40255	100µF 20% 63V
2728	4822 124 40248	10µF 20% 63V
2729	4822 126 14305	100nF 10% 16V 0603
2730	4822 124 40255	100µF 20% 63V
2740	4822 126 14494	22nF 10% 25V 0603
2741	4822 126 14494	22nF 10% 25V 0603
2742	4822 126 14494	22nF 10% 25V 0603
2745	4822 126 14305	100nF 10% 16V 0603
2746	4822 126 14305	100nF 10% 16V 0603
2747	4822 124 40769	4.7µF 20% 100V
2748	4822 126 14305	100nF 10% 16V 0603
2749	4822 124 40255	100µF 20% 63V
2750	4822 126 14305	100nF 10% 16V 0603
2751	4822 126 14305	100nF 10% 16V 0603
2752	4822 126 14305	100nF 10% 16V 0603
2753	4822 126 14305	100nF 10% 16V 0603
2754	4822 124 40769	4.7µF 20% 100V
2755	4822 126 14305	100nF 10% 16V 0603
2756	4822 126 14305	100nF 10% 16V 0603
2757	4822 126 14494	22nF 10% 25V 0603
2758	4822 126 14507	18pF 5% 50V 0603
2759	4822 126 14507	18pF 5% 50V 0603
2760	4822 126 14305	100nF 10% 16V 0603
2761	4822 126 14305	100nF 10% 16V 0603
2762	4822 126 14305	100nF 10% 16V 0603
2763	4822 126 14305	100nF 10% 16V 0603
2764	4822 126 14305	100nF 10% 16V 0603
2765	4822 126 14305	100nF 10% 16V 0603
2766	4822 126 14305	100nF 10% 16V 0603
2767	4822 126 14305	100nF 10% 16V 0603
2769	4822 126 14305	100nF 10% 16V 0603
2773	4822 126 14305	100nF 10% 16V 0603
2775	4822 126 14305	100nF 10% 16V 0603
2777	4822 126 14305	100nF 10% 16V 0603
2779	4822 126 14305	100nF 10% 16V 0603
2781	4822 126 14305	100nF 10% 16V 0603
2782	4822 126 14305	100nF 10% 16V 0603
2783	4822 126 14305	100nF 10% 16V 0603
2784	4822 126 14305	100nF 10% 16V 0603
2785	4822 126 14305	100nF 10% 16V 0603
2786	4822 126 14305	100nF 10% 16V 0603
2787	4822 126 14305	100nF 10% 16V 0603
2788	4822 126 14305	100nF 10% 16V 0603
2789	4822 126 14305	100nF 10% 16V 0603
2790	4822 126 14305	100nF 10% 16V 0603
2791	4822 126 14305	100nF 10% 16V 0603
2792	4822 124 40248	10µF 20% 63V
2793	4822 126 14305	100nF 10% 16V 0603
2794	4822 124 40248	10µF 20% 63V
2795	4822 126 14305	100nF 10% 16V 0603
2796	4822 126 14305	100nF 10% 16V 0603
2797	4822 126 14305	100nF 10% 16V 0603
2798	4822 126 14305	100nF 10% 16V 0603
2799	4822 126 14305	100nF 10% 16V 0603
2800	4822 126 14305	100nF 10% 16V 0603
2801	4822 126 14305	100nF 10% 16V 0603
2802	4822 126 14305	100nF 10% 16V 0603
2803	4822 126 14305	100nF 10% 16V 0603
2804	4822 126 14305	100nF 10% 16V 0603
2805	4822 126 14305	100nF 10% 16V 0603
2806	4822 124 40255	100µF 20% 63V
2807	4822 126 14305	100nF 10% 16V 0603
2808	4822 124 40248	10µF 20% 63V
2809	4822 126 14305	100nF 10% 16V 0603
2813	4822 126 14305	100nF 10% 16V 0603
2817	4822 126 14305	100nF 10% 16V 0603
2822	4822 126 14305	100nF 10% 16V 0603
2825	4822 126 14305	100nF 10% 16V 0603
2826	4822 126 14305	100nF 10% 16V 0603
2829	4822 126 14305	100nF 10% 16V 0603
2832	4822 126 14305	100nF 10% 16V 0603
2833	4822 126 14305	100nF 10% 16V 0603
2835	4822 126 14305	100nF 10% 16V 0603
2838	4822 126 14305	100nF 10% 16V 0603
2845	4822 126 14305	100nF 10% 16V 0603
2847	4822 126 14305	100nF 10% 16V 0603
2848	4822 126 14305	100nF 10% 16V 0603
2849	4822 126 14305	100nF 10% 16V 0603
2850	4822 126 14305	100nF 10% 16V 0603

2851	4822 126 14305	100nF 10% 16V 0603
2852	4822 126 14305	100nF 10% 16V 0603
2853	4822 126 14305	100nF 10% 16V 0603
2854	4822 126 14305	100nF 10% 16V 0603
2855	4822 126 14305	100nF 10% 16V 0603
2856	4822 126 14305	100nF 10% 16V 0603
2858	4822 126 14305	100nF 10% 16V 0603
2859	4822 126 14305	100nF 10% 16V 0603
2860	4822 126 14305	100nF 10% 16V 0603
2861	4822 126 14305	100nF 10% 16V 0603
2862	4822 126 14305	100nF 10% 16V 0603
2863	4822 126 14305	100nF 10% 16V 0603
2864	4822 126 14305	100nF 10% 16V 0603
2865	4822 126 14305	100nF 10% 16V 0603
2866	4822 126 14305	100nF 10% 16V 0603
2867	4822 126 14305	100nF 10% 16V 0603
2868	4822 124 40248	10µF 20% 63V
2869	4822 126 14305	100nF 10% 16V 0603
2870	4822 124 40255	100µF 20% 63V
2871	4822 126 14305	100nF 10% 16V 0603
2872	4822 126 14305	100nF 10% 16V 0603
2885	4822 126 14305	100nF 10% 16V 0603
2888	4822 126 14305	100nF 10% 16V 0603
2889	4822 126 14305	100nF 10% 16V 0603
2890	4822 126 14305	100nF 10% 16V 0603
2891	4822 126 14305	100nF 10% 16V 0603
2892	4822 126 14305	100nF 10% 16V 0603
2893	4822 126 14305	100nF 10% 16V 0603
2894	4822 126 14305	100nF 10% 16V 0603
2895	4822 126 14305	100nF 10% 16V 0603
2896	4822 126 14305	100nF 10% 16V 0603
2897	4822 124 40248	10µF 20% 63V
2898	4822 126 14305	100nF 10% 16V 0603
2899	4822 126 14305	100nF 10% 16V 0603
2901	4822 126 14305	100nF 10% 16V 0603
2902	4822 126 14305	100nF 10% 16V 0603
2903	4822 126 14305	100nF 10% 16V 0603
2904	4822 126 14305	100nF 10% 16V 0603
2905	4822 126 14305	100nF 10% 16V 0603
2906	4822 126 14305	100nF 10% 16V 0603
2907	4822 126 14305	100nF 10% 16V 0603
2908	4822 126 14305	100nF 10% 16V 0603
2909	4822 124 40255	100µF 20% 63V
2910	4822 126 11669	27pF
2911	4822 126 14223	2.2pF +-0.25pF 50V 0603
2912	4822 126 11663	12pF
2913	4822 126 11663	12pF
2914	4822 126 11669	27pF
2915	4822 126 11663	12pF
2916	4822 126 11663	12pF
2917	4822 126 14223	2.2pF +-0.25pF 50V 0603
2918	4822 126 14223	2.2pF +-0.25pF 50V 0603
2920	4822 126 11669	27pF
2921	4822 126 11663	12pF
2922	4822 126 11663	12pF
2923	4822 126 14305	100nF 10% 16V 0603
2924	4822 126 14305	100nF 10% 16V 0603
2925	4822 126 14305	100nF 10% 16V 0603
2926	4822 126 14305	100nF 10% 16V 0603
2927	4822 126 14305	100nF 10% 16V 0603
2928	4822 126 14305	100nF 10% 16V 0603
2929	4822 126 13956	68pF 5% 63V 0603

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3700	4822 051 30008	Jumper 0603
3701	4822 051 30008	Jumper 0603
3702	4822 051 30008	Jumper 0603
3703	4822 051 30221	220Ω 5% 0.062W
3704	4822 051 30221	220Ω 5% 0.062W
3705	4822 051 30221	220Ω 5% 0.062W
3709	4822 051 30101	100Ω 5% 0.062W
3710	4822 051 30101	100Ω 5% 0.062W
3713	4822 051 30181	180Ω 5% 0.062W
3714	4822 051 30181	180Ω 5% 0.062W
3715	4822 051 30181	180Ω 5% 0.062W
3716	4822 117 13632	100k 1% 0.62W 0603
3717	4822 117 13632	100k 1% 0.62W 0603
3718	4822 117 13632	100k 1% 0.62W 0603
3719	4822 051 30008	Jumper 0603
3720	4822 051 30008	Jumper 0603
3721	4822 051 30008	Jumper 0603
3725	4822 051 30332	3k3 5% 0.062W
3726	4822 117 11817	1k2 1% 1/16W
3727	4822 051 30151	150Ω 5% 0.062W
3728	4822 051 30151	150Ω 5% 0.062W
3729	4822 051 30689	68Ω 5% 0.063W 0603
3730	4822 051 30689	68Ω 5% 0.063W 0603
3731	4822 051 30472	4k7 5% 0.062W
3732	4822 051 30472	4k7 5% 0.062W
3733	4822 051 30472	4k7 5% 0.062W
3735	4822 051 30472	4k7 5% 0.062W
3740	4822 051 30008	Jumper 0603
3741	4822 051 30008	Jumper 0603
3742	4822 051 30008	Jumper 0603
3752	4822 117 12917	1Ω 5% 0.062W 0603
3753	4822 117 12917	1Ω 5% 0.062W 0603
3758	4822 051 30472	4k7 5% 0.062W
3759	4822 051 30221	220Ω 5% 0.062W
3760	4822 051 30105	1M 5% 0.062W
3762	4822 051 30339	33Ω 5% 0.062W
3763	4822 117 12139	22Ω 5% 0.062W
3764	4822 051 30109	10Ω 5% 0.062W
3773	4822 117 12925	47k 1% 0.063W 0603
3774	4822 117 12925	47k 1% 0.063W 0603
3781	4822 117 12925	47k 1% 0.063W 0603
3782	4822 117 12925	47k 1% 0.063W 0603
3783	4822 117 12925	47k 1% 0.063W 0603
3784	4822 051 30102	1k 5% 0.062W
3787	4822 051 30154	150k 5% 0.062W
3788	4822 117 12891	220k 1%
3789	4822 051 30472	4k7 5% 0.062W
3790	4822 051 30101	100Ω 5% 0.062W
3791	4822 051 30101	100Ω 5% 0.062W
3792	4822 051 30102	1k 5% 0.062W
3793	4822 051 30392	3k9 5% 0.063W 0603
3794	4822 117 12903	1k8 1% 0.063W 0603
3795	4822 051 30183	18k 5% 0.062W
3796	4822 051 30123	12k 5% 0.062W
3797	4822 051 30153	15k 5% 0.062W
3798	4822 051 30183	18k 5% 0.062W
3803	5322 117 13058	150Ω 1% 0.063W 0603
3804	5322 117 13058	150Ω 1% 0.063W 0603
3805	4822 051 30102	1k 5% 0.062W
3806	4822 051 30102	1k 5% 0.062W
3811	5322 117 13058	150Ω 1% 0.063W 0603
3812	5322 117 13058	150Ω 1% 0.063W 0603
3813	5322 117 13058	150Ω 1% 0.063W 0603
3820	5322 117 13058	150Ω 1% 0.063W 0603
3826	4822 051 30759	75Ω 5% 0.062W
3827	4822 051 30759	75Ω 5% 0.062W
3828	4822 051 30471	470Ω 5% 0.062W
3829	4822 051 30391	390Ω 5% 0.062W
3830	4822 051 30271	270Ω 5% 0.062W
3831	4822 051 30681	680Ω 5% 0.062W
3832	4822 117 13577	330Ω 1% 1.25W 0805
3833	4822 051 30759	75Ω 5% 0.062W
3834	4822 051 30759	75Ω 5% 0.062W
3835	4822 051 30759	75Ω 5% 0.062W
3836	4822 051 30759	75Ω 5% 0.062W
3837	4822 051 30471	470Ω 5% 0.062W
3838	4822 051 30391	390Ω 5% 0.062W
3839	4822 051 30471	470Ω 5% 0.062W
3840	4822 051 30102	1k 5% 0.062W
3841	4822 117 13577	330Ω 1% 1.25W 0805
3842	4822 051 30759	75Ω 5% 0.062W
3843	4822 051 30759	75Ω 5% 0.062W
3844	4822 051 30759	75Ω 5% 0.062W
3845	4822 051 30759	75Ω 5% 0.062W
3846	4822 051 30471	470Ω 5% 0.062W
3847	4822 051 30391	390Ω 5% 0.062W
3848	4822 051 30391	390Ω 5% 0.062W
3849	4822 051 30331	330Ω 5% 0.062W
3850	4822 117 13577	330Ω 1% 1.25W 0805
3851	4822 051 30759	75Ω 5% 0.062W
3852	4822 051 30759	75Ω 5% 0.062W
3853	4822 117 12902	8k2 1% 0.063W 0603
3854	4822 051 30392	3k9 5% 0.063W 0603
3855	4822 051 30102	1k 5% 0.062W
3856	4822 051 30102	1k 5% 0.062W
3857	4822 052 10109	10Ω 5% 0.33W
3858	4822 051 30222	2k2 5% 0.062W
3859	4822 051 30222	2k2 5% 0.062W
3860	4822 051 30102	1k 5% 0.062W
3861	4822 051 30332	3k3 5% 0.062W
3862	4822 051 30103	10k 5% 0.062W
3863	4822 051 30681	680Ω 5% 0.062W
3864	4822 117 12925	47k 1% 0.063W 0603
3865	4822 051 30472	4k7 5% 0.062W
3870	4822 051 30109	10Ω 5% 0.062W
3871	4822 117 12971	15Ω 5% 0.62W 0603
3872	4822 117 12925	47k 1% 0.063W 0603
3999	4822 051 30102	1k 5% 0.062W

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5700	4822 157 71304	1µH 10%
5701	4822 157 71304	1µH 10%
5702	4822 157 71304	1µH 10%
5703	4822 157 11716	Bead 100MHz 30Ω
5704	4822 157 11716	Bead 100MHz 30Ω
5705	4822 157 11716	Bead 100MHz 30Ω
5706	4822 157 11716	Bead 100MHz 30Ω
5707	4822 051 20008	Jumper 0805
5708	4822 051 20008	Jumper 0805
5709	4822 051 20008	Jumper 0805
5710	4822 156 21729	Bead 100MHz 1k
5711	4822 156 21729	Bead 100MHz 1k
5712	4822 156 21729	Bead 100MHz 1k
5713	4822 157 11716	Bead 100MHz 30Ω
5714	4822 157 71206	Bead 100MHz 600Ω
5715	4822 156 21729	Bead 100MHz 1k
5716	4822 156 21729	Bead 100MHz 1k
5717	4822 156 21729	Bead 100MHz 1k
5718	4822 157 11716	Bead 100MHz 30Ω
5719	4822 156 21729	Bead 100MHz 1k
5723	4822 157 11716	Bead 100MHz 30Ω
5724	4822 157 71206	Bead 100MHz 600Ω
5725	4822 157 71206	Bead 100MHz 600Ω
5726	4822 156 21729	Bead 100MHz 1k
5727	4822 156 21729	Bead 100MHz 1k
5728	4822 157 71206	Bead 100MHz 600Ω
5729	4822 156 21729	Bead 100MHz 1k
5730	4822 157 11716	Bead 100MHz 30Ω
5731	4822 156 21729	Bead 100MHz 1k
5732	4822 157 10586	2.2µH 10% 0805
5733	4822 157 10586	2.2µH 10% 0805
5734	4822 157 10586	2.2µH 10% 0805
5736	4822 156 21729	Bead 100MHz 1k

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7703	4822 209 73852	PMBT2369
7704	4822 209 73852	PMBT2369
7705	4822 209 17398	LD1117DT33
7706	9322 160 50668	LD1117DT25
7711	3104 317 43531	Software RE1F2_04
7712	5322 209 60424	74HC573D
7713	9352 688 09557	SAA4978H/V204
7714	9965 000 02179	MS81V04160-25TB
7717	9322 146 01668	MSM54V12222A-23JS
7718	9352 695 58557	SAA4993H/V1
7719	9322 146 01668	MSM54V12222A-23JS
7720	4822 209 17398	LD1117DT33
7722	9965 000 02179	MS81V04160-25TB
7723	9965 000 02179	MS81V04160-25TB
7724	9322 174 33702	T8F24EF EAGLE
7725	9322 160 50668	LD1117DT25
7727	4822 130 60511	BC847B
7728	4822 130 60511	BC847B
7729	4822 130 60511	BC847B
7730	5322 130 42718	BFS20
7731	5322 130 42718	BFS20
7732	5322 130 42718	BFS20
7733	5322 130 42718	BFS20
7734	5322 130 42718	BFS20
7735	5322 130 42718	BFS20
7736	4822 130 60511	BC847B
7739	9322 170 14668	LF15ABDT
7740	4822 209 73852	PMBT2369
7741	4822 209 73852	PMBT2369

Full Dual Screen Panel [M]

Various

0344	4822 267 10963	3P white
0346	4822 267 10967	3P black
0347	4822 267 10969	3P red
0348	4822 267 11043	3P yellow
0351	2422 025 15391	11P male
0352	2422 025 15391	11P male
1102	3139 147 18841	Tuner UV1316/A P X-3
1105	4822 242 10688	Filter OFWK9456M
1107	4822 242 72211	Filter 5.5 MHz
1109	4822 242 81436	Filter OFWK3953M
1198	3104 301 08351	Cable phono-phono 120mm
1525	4822 242 10695	Crystal 4.433 619 MHz
1528	4822 242 10697	Crystal 3.579 545 MHz
1601	4822 242 10314	Filter 5.5 MHz
1602	4822 242 81265	Filter 6.0
1603	4822 242 81299	Filter 6.5
1800	2422 086 10581	Prot dev 65V 400mA
8347	3104 301 09062	Cable 3P 220mm red
8348	3104 301 08493	Cable 3P 140mm yellow

⊣⊢

2101	4822 124 80195	470µF 20% 10V
2102	4822 126 13473	220nF 80-20% 50V
2104	4822 122 33177	10nF 20% 50V
2105	4822 122 33177	10nF 20% 50V
2106	4822 122 33575	220pF 5% 63V
2107	4822 126 13956	68pF 5% 63V 0603
2108	5322 126 10225	1P5 5%
2109	4822 124 22652	2.2µF 20% 50V
2110	4822 124 21913	1µF 20% 63V

2111	4822 126 14585	100nF 10% 50V
2112	4822 122 33891	3.3nF 10% 63V
2116	4822 124 12095	100µF 20% 16V
2117	4822 126 14076	220nF 20-80% 25V
2118	4822 126 14487	8.2pF 0.5% 50V 0603
2119	5322 122 31863	330pF 5% 63V
2120	4822 126 14076	220nF 20-80% 25V
2140	4822 126 14491	2.2µF 10V
2501	4822 126 14305	100nF 10% 16V 0603
2504	4822 126 14305	100nF 10% 16V 0603
2520	4822 126 14305	100nF 10% 16V 0603
2521	4822 126 14305	100nF 10% 16V 0603
2522	5322 126 11579	3.3nF 10% 63V
2525	4822 126 14507	18pF 5% 50V 0603
2528	4822 122 33752	15pF 5% 50V
2532	4822 126 14043	1µF 20% 16V
2534	5322 126 10223	4.7nF 10% 63V
2536	4822 126 14491	2.2µF 10V
2537	4822 126 14585	100nF 10% 50V
2538	4822 124 80151	47µF 16V
2539	4822 126 14585	100nF 10% 50V
2540	4822 124 80151	47µF 16V
2541	4822 126 14585	100nF 10% 50V
2545	4822 126 14305	100nF 10% 16V 0603
2600	4822 126 14491	2.2µF 10V
2601	4822 126 14585	100nF 10% 50V
2603	4822 126 14491	2.2µF 10V
2605	4822 126 14585	100nF 10% 50V
2620	4822 122 32927	220nF 20% 50V
2621	4822 126 14585	100nF 10% 50V
2622	4822 122 32927	220nF 20% 50V
2623	4822 122 32927	220nF 20% 50V
2624	5322 124 41945	22µF 20% 35V
2625	4822 122 32927	220nF 20% 50V
2626	4822 126 14585	100nF 10% 50V
2627	5322 122 32654	22nF 10% 63V
2628	4822 126 14585	100nF 10% 50V
2629	4822 122 32927	220nF 20% 50V
2630	4822 124 80408	4.7µF 20% 50V
2632	4822 122 32927	220nF 20% 50V
2633	4822 126 14585	100nF 10% 50V
2638	4822 126 14491	2.2µF 10V
2639	4822 124 23002	10µF 16V
2640	4822 124 23002	10µF 16V
2650	4822 124 80195	470µF 20% 10V
2748	4822 126 14305	100nF 10% 16V 0603
2749	4822 126 14305	100nF 10% 16V 0603
2752	4822 126 14305	100nF 10% 16V 0603
2753	4822 126 14305	100nF 10% 16V 0603
2754	4822 126 14305	100nF 10% 16V 0603
2755	4822 126 14305	100nF 10% 16V 0603
2756	4822 126 14305	100nF 10% 16V 0603
2757	4822 126 14305	100nF 10% 16V 0603
2758	3198 017 41050	1µF 10V 0603
2759	4822 126 14305	100nF 10% 16V 0603
2761	4822 126 14305	100nF 10% 16V 0603
2762	4822 126 14305	100nF 10% 16V 0603
2763	4822 126 14305	100nF 10% 16V 0603
2766	4822 126 14305	100nF 10% 16V 0603
2767	4822 126 14305	100nF 10% 16V 0603
2768	4822 126 14305	100nF 10% 16V 0603
2769	4822 126 14305	100nF 10% 16V 0603
2770	4822 126 14305	100nF 10% 16V 0603
2771	4822 126 14305	100nF 10% 16V 0603
2772	4822 126 14305	100nF 10% 16V 0603
2773	4822 126 14305	100nF 10% 16V 0603
2774	4822 126 14305	100nF 10% 16V 0603
2775	4822 126 14305	100nF 10% 16V 0603
2776	4822 126 14305	100nF 10% 16V 0603
2777	4822 126 14305	100nF 10% 16V 0603
2778	4822 126 14305	100nF 10% 16V 0603
2779	4822 126 14305	100nF 10% 16V 0603
2780	4822 126 14305	100nF 10% 16V 0603
2781	4822 126 14305	100nF 10% 16V 0603
2782	4822 126 14305	100nF 10% 16V 0603
2783	4822 124 23002	10µF 16V
2784	4822 124 23002	10µF 16V
2785	4822 122 33177	10nF 20% 50V
2786	4822 122 33177	10nF 20% 50V
2787	4822 126 14305	100nF 10% 16V 0603
2788	5322 122 32531	100pF 5% 50V
2789	4822 126 13692	47pF 1% 63V
2791	5322 122 32658	22pF 5% 50V
2794	5322 122 32658	22pF 5% 50V
2795	4822 124 12095	100µF 20% 16V
2796	4822 124 12095	100µF 20% 16V
2797	4822 124 12095	100µF 20% 16V
2800	4822 126 13879	220nF 20% 16V
2801	4822 126 13879	220nF 20% 16V
2802	4822 126 13879	220nF 20% 16V
2803	4822 126 13879	220nF 20% 16V
2804	4822 126 13879	220nF 20% 16V
2805	4822 126 13879	220nF 20% 16V
2807	4822 126 14585	100nF 10% 50V
2840	4822 126 14585	100nF 10% 50V
2860	4822 126 14305	100nF 10% 16V 0603
2880	5322 124 41945	22µF 20% 35V
2881	4822 124 40433	47µF 20% 25V
2882	4822 124 11912	220µF 20% 6.3V
2883	4822 124 12095	100µF 20% 16V
2884	4822 126 14491	2.2µF 10V
2890	4822 126 14585	100nF 10% 50V
2891	4822 126 14585	100nF 10% 50V
2922	4822 126 14241	330pF 50V 0603
2923	4822 126 14305	100nF 10% 16V 0603
2932	4822 122 33753	150pF 5% 50V
2934	4822 126 14305	100nF 10% 16V 0603
2942	4822 122 33753	150pF 5% 50V
2944	4822 126 14305	100nF 10% 16V 0603
2972	4822 126 14241	330pF 50V 0603
2973	4822 126 14305	100nF 10% 16V 0603
2982	4822 122 33753	150pF 5% 50V
2983	4822 126 14305	100nF 10% 16V 0603
2992	4822 122 33753	150pF 5% 50V
2993	4822 126 14305	100nF 10% 16V 0603

3100	4822 051 20273	27k 5% 0.1W
3101	4822 051 20273	27k 5% 0.1W
3102	4822 051 30562	5k6 5% 0.063W 0603
3103	4822 051 20008	Jumper 0805
3104	4822 051 20008	Jumper 0805
3106	4822 117 11927	75Ω 1% 0.1W
3110	4822 117 11449	2k2 5% 0.1W 0805
3111	4822 117 11449	2k2 5% 0.1W 0805
3112	4822 051 20472	4k7 5% 0.1W
3114	4822 051 20472	4k7 5% 0.1W
3118	4822 051 20391	390Ω 5% 0.1W
3119	4822 117 12521	68Ω 1% 0.1W
3124	4822 051 30101	100Ω 5% 0.062W
3133	4822 117 12955	2k7 1% 0.1W 0805
3135	4822 051 20472	4k7 5% 0.1W
3136	4822 117 11503	220Ω 1% 0.1W
3137	4822 051 10102	1k 2% 0.25W
3138	4822 117 11448	180Ω 1% 0.1W
3139	4822 117 11139	1k5 1% 0.1W
3140	4822 051 30393	39k 5% 0.062W
3142	4822 051 10102	1k 2% 0.25W
3143	4822 051 10102	1k 2% 0.25W
3145	4822 051 20121	120Ω 5% 0.1W
3146	4822 051 20223	22k 5% 0.1W
3151	4822 052 10128	1Ω2 5% 0.33W
3501	4822 051 30101	100Ω 5% 0.062W
3504	4822 051 30101	100Ω 5% 0.062W
3521	4822 117 13632	100k 1% 0.62W 0603
3530	4822 051 30101	100Ω 5% 0.062W
3531	4822 051 30101	100Ω 5% 0.062W
3532	4822 116 83933	15k 1% 0.1W
3538	4822 052 10228	2Ω2 5% 0.33W
3545	4822 051 30471	470Ω 5% 0.062W
3546	4822 051 30471	470Ω 5% 0.062W
3550	4822 051 20471	470Ω 5% 0.1W
3601	4822 117 10361	680Ω 1% 0.1W
3602	4822 051 20471	470Ω 5% 0.1W
3603	4822 051 20471	470Ω 5% 0.1W
3604	4822 051 20273	27k 5% 0.1W
3605	4822 051 20391	390Ω 5% 0.1W
3620	4822 117 11507	6k8 1% 0.1W
3621	4822 117 11507	6k8 1% 0.1W
3622	4822 117 11373	100Ω 1% 0805
3623	4822 117 10361	680Ω 1% 0.1W
3624	4822 117 11454	820Ω 1% 0.1W
3625	4822 117 11454	820Ω 1% 0.1W
3630	4822 051 20273	27k 5% 0.1W
3634	4822 051 20273	27k 5% 0.1W
3635	4822 051 20822	8k2 5% 0.1W
3636	4822 051 20822	8k2 5% 0.1W
3642	4822 051 20562	5k6 5% 0.1W 0805
3650	4822 052 10688	6Ω8 5% 0.33W
3747	4822 051 20223	22k 5% 0.1W
3748	4822 051 20223	22k 5% 0.1W
3750	4822 051 30393	39k 5% 0.062W
3751	4822 051 30393	39k 5% 0.062W
3752	4822 051 30103	10k 5% 0.062W
3756	4822 051 30101	100Ω 5% 0.062W
3757	4822 051 30101	100Ω 5% 0.062W
3765	4822 051 20683	68k 5% 0.1W
3766	4822 117 11139	1k5 1% 0.1W
3767	4822 051 20683	68k 5% 0.1W
3768	4822 117 11139	1k5 1% 0.1W
3780	4822 051 30222	2k2 5% 0.062W
3781	4822 117 13632	100k 1% 0.62W 0603
3782	4822 051 30222	2k2 5% 0.062W
3783	4822 117 13632	100k 1% 0.62W 0603
3796	4822 051 20121	120Ω 5% 0.1W
3797	4822 051 20121	120Ω 5% 0.1W
3798	4822 051 20121	120Ω 5% 0.1W
3799	4822 051 20121	120Ω 5% 0.1W
3842	4822 117 11503	220Ω 1% 0.1W
3843	4822 051 30221	220Ω 5% 0.062W
3880	4822 051 30102	1k 5% 0.062W
3923	4822 051 30471	470Ω 5% 0.062W
3924	4822 051 30101	100Ω 5% 0.062W
3928	4822 051 30101	100Ω 5% 0.062W
3932	4822 051 30101	100Ω 5% 0.062W
3935	4822 051 30102	1k 5% 0.062W
3937	4822 051 30151	150Ω 5% 0.062W
3942	4822 051 30101	100Ω 5% 0.062W
3943	4822 051 30102	1k 5% 0.062W
3947	4822 051 30151	150Ω 5% 0.062W
3950	4822 117 11504	270Ω 1% 0.1W
3951	4822 051 20339	33Ω 5% 0.1W
3952	4822 117 11504	270Ω 1% 0.1W
3953	4822 117 11448	180Ω 1% 0.1W
3954	4822 051 20391	390Ω 5% 0.1W
3955	4822 117 11503	220Ω 1% 0.1W
3956	4822 117 10361	680Ω 1% 0.1W
3957	4822 117 10361	680Ω 1% 0.1W
3958	4822 117 10361	680Ω 1% 0.1W
3963	4822 051 10102	1k 2% 0.25W
3964	4822 051 10102	1k 2% 0.25W
3965	4822 051 10102	1k 2% 0.25W
3972	4822 051 30471	470Ω 5% 0.062W
3974	4822 051 30101	100Ω 5% 0.062W
3978	4822 051 30101	100Ω 5% 0.062W
3981	4822 051 30101	100Ω 5% 0.062W
3983	4822 051 30102	1k 5% 0.062W
3987	4822 051 30151	150Ω 5% 0.062W
3991	4822 051 30101	100Ω 5% 0.062W
3992	4822 051 30102	1k 5% 0.062W
3997	4822 051 30151	150Ω 5% 0.062W
3999	4822 051 10102	1k 2% 0.25W
4xxx	4822 051 10008	Jumper 1206
4xxx	4822 051 20008	Jumper 0805

5101	4822 157 11775	6.8µH 5% 5X3
5102	4822 157 71303	0.39µH 10% 0805
5103	4822 157 11776	Coil var. 40.4MHz
5106	4822 157 10977	4.7µH 10%
5108	4822 157 11534	Coil var. 78MHz
5501	4822 157 11775	6.8µH 5% 5X3
5502	4822 157 11775	6.8µH 5% 5X3
5620	4822 157 11775	6.8µH 5% 5X3
5621	4822 157 11775	6.8µH 5% 5X3
5752	4822 157 71694	0.82µH 10%
5880	2422 535 94406	2.7µH 10%
5881	4822 157 71694	0.82µH 10%
5882	4822 157 71694	0.82µH 10%
5921	4822 157 10586	2.2µH 10% 0805
5971	4822 157 10586	2.2µH 10% 0805

6103	4822 130 11525	1SS356
6104	4822 130 11525	1SS356
6106	4822 130 83757	MCL4148
6107	4822 130 83757	MCL4148
6880	9322 129 32685	BZM55-C2V7
6881	9322 129 32685	BZM55-C2V7
6883	4822 130 11422	PLVA2650A
6884	4822 130 11422	PLVA2650A

7103	4822 130 60511	BC847B
7104	4822 130 60511	BC847B
7107	4822 130 60373	BC856B
7111	4822 130 60511	BC847B
7501	9352 625 24518	TDA9321H/N2
7502	4822 130 60511	BC847B
7600	9350 399 00118	TDA9820T/V1
7620	5322 209 16349	TDA7309D
7621	4822 130 60511	BC847B
7622	4822 130 60373	BC856B
7700	9352 637 90557	SAB9079HS/N2
7750	9322 124 83668	MSM5416283-60GS
7757	4822 209 31378	NJM4556MB
7800	4822 209 12776	TDA8601T/C1
7821	9322 135 04668	74V1G08
7840	5322 209 14481	HEF4053BT
7860	4822 209 13252	PCF8574TS/F3
7880	9322 116 74668	LD1117D33
7881	9322 116 74668	LD1117D33
7903	4822 130 60383	BF824
7904	4822 130 60383	BF824
7905	4822 130 60383	BF824

7920	4822 130 60511	BC847B
7930	4822 130 60511	BC847B
7940	4822 130 60511	BC847B
7970	4822 130 60511	BC847B
7980	4822 130 60511	BC847B
7990	4822 130 60511	BC847B
7991	4822 209 16868	M24C04-WMN6

Multi Channel Sound Panel [N]

Various

0328	4822 267 10981	11P male black
0329	4822 267 10962	11P male white
0330	2422 025 14904	7P male white
0347	4822 267 10969	3P male red
0373	4822 267 10978	7P male black
0381	4822 267 10963	3P male white
1705	2422 086 10581	Prot dev 65V 400mA
1804	2422 543 01217	Crystal 40 MHz
1805	2422 543 01025	Crystal 16.93 MHz
1806	2422 543 01015	Crystal 10 MHz
1807	4822 252 51169	Fuse 0,25A
1998	2422 025 16194	Socket 8P for transmitter
1999	2422 026 04961	Socket cinch 6P white/red/black
8328	3104 301 08912	Cable 11P 220mm black
8330	3104 301 08952	Cable 7P 820mm white
8373	3104 301 08922	Cable 7P 280mm black
8381	3104 301 08932	Cable 3P 140mm white

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2500	4822 126 14315	390pF 5% 50V 0603
2501	4822 126 14315	390pF 5% 50V 0603
2504	5322 126 11583	10nF 10% 50V 0603
2505	4822 126 14305	100nF 10% 16V 0603
2506	4822 126 14305	100nF 10% 16V 0603
2507	2222 867 15339	33pF 5% 50V 0603
2508	2222 867 15339	33pF 5% 50V 0603
2511	4822 126 12105	33nF 5% 50V
2516	4822 122 31765	100pF 2% 63V
2517	4822 122 31765	100pF 2% 63V
2534	5322 126 11583	10nF 10% 50V 0603
2539	4822 126 14506	270pF 5% 50V 0603
2540	4822 126 14305	100nF 10% 16V 0603
2541	4822 126 14305	100nF 10% 16V 0603
2542	4822 124 23002	10μF 16V
2543	4822 124 23002	10μF 16V
2545	4822 124 23002	10μF 16V
2546	4822 124 23002	10μF 16V
2548	4822 126 14549	33nF 16V O6O3
2549	5322 126 11579	3.3nF 10% 63V
2551	4822 126 14549	33nF 16V O6O3
2552	4822 126 14549	33nF 16V O6O3
2553	3198 017 34730	47nF 16V 0603
2555	4822 124 23002	10μF 16V
2556	5322 126 11579	3.3nF 10% 63V
2557	4822 126 14549	33nF 16V O6O3
2560	3198 017 34730	47nF 16V 0603
2562	4822 124 23002	10μF 16V
2563	4822 124 23002	10μF 16V
2564	4822 124 23002	10μF 16V
2565	4822 126 14305	100nF 10% 16V 0603
2566	4822 126 14305	100nF 10% 16V 0603
2567	2222 867 15339	33pF 5% 50V 0603
2568	2222 867 15339	33pF 5% 50V 0603
2569	4822 124 23002	10μF 16V
2570	4822 126 14305	100nF 10% 16V 0603
2571	4822 126 14305	100nF 10% 16V 0603
2572	4822 124 23002	10μF 16V
2573	4822 124 23002	10μF 16V
2574	4822 124 23002	10μF 16V
2575	4822 124 23002	10μF 16V
2576	4822 124 23002	10μF 16V
2577	4822 124 23002	10μF 16V
2578	4822 126 14549	33nF 16V O6O3
2579	5322 126 11579	3.3nF 10% 63V
2580	4822 126 14549	33nF 16V O6O3
2583	3198 017 34730	47nF 16V 0603
2585	2222 867 15339	33pF 5% 50V 0603
2586	5322 126 11579	3.3nF 10% 63V
2587	4822 126 14494	22nF 10% 25V 0603
2590	3198 017 34730	47nF 16V 0603
2592	4822 124 23002	10μF 16V
2593	4822 124 23002	10μF 16V
2594	4822 124 23002	10μF 16V
2595	4822 126 14305	100nF 10% 16V 0603
2596	4822 126 14305	100nF 10% 16V 0603
2597	2222 867 15339	33pF 5% 50V 0603
2598	2222 867 15339	33pF 5% 50V 0603
2599	5322 126 11582	6.8nF 10% 63V
2600	4822 126 14305	100nF 10% 16V 0603
2601	4822 126 14305	100nF 10% 16V 0603
2602	4822 124 23002	10μF 16V
2603	4822 124 23002	10μF 16V
2605	4822 124 23002	10μF 16V
2606	4822 124 23002	10μF 16V
2607	4822 124 23002	10μF 16V
2609	5322 126 11579	3.3nF 10% 63V
2612	4822 124 40207	100μF 20% 25V
2613	3198 017 34730	47nF 16V 0603
2620	3198 017 34730	47nF 16V 0603
2622	4822 124 23002	10μF 16V
2623	4822 124 23002	10μF 16V
2624	4822 124 23002	10μF 16V
2625	4822 126 14305	100nF 10% 16V 0603
2626	4822 126 14305	100nF 10% 16V 0603
2627	2222 867 15339	33pF 5% 50V 0603
2628	2222 867 15339	33pF 5% 50V 0603
2635	4822 126 14305	100nF 10% 16V 0603
2636	4822 126 14305	100nF 10% 16V 0603
2637	5322 121 42498	680nF 5% 63V
2638	5322 121 42498	680nF 5% 63V
2639	4822 126 14305	100nF 10% 16V 0603
2641	5322 121 42498	680nF 5% 63V
2643	2222 867 15339	33pF 5% 50V 0603
2667	4822 126 14494	22nF 10% 25V 0603
2668	5322 126 11582	6.8nF 10% 63V
2669	2222 867 15339	33pF 5% 50V 0603
2679	4822 126 14585	100nF 10% 50V
2680	4822 126 14585	100nF 10% 50V
2681	5322 122 32659	33pF 5% 50V
2682	5322 122 32659	33pF 5% 50V
2690	4822 126 14305	100nF 10% 16V 0603
2704	4822 126 14305	100nF 10% 16V 0603
2705	4822 124 12095	100μF 20% 16V
2706	4822 126 14585	100nF 10% 50V
2707	4822 124 40248	10μF 20% 63V
2708	4822 126 14585	100nF 10% 50V
2709	4822 124 21913	1μF 20% 63V
2710	4822 124 40248	10μF 20% 63V
2711	4822 126 14585	100nF 10% 50V
2712	4822 124 21913	1μF 20% 63V
2713	4822 126 14585	100nF 10% 50V
2715	5322 122 32531	100pF 5% 50V
2716	4822 122 33575	220pF 5% 63V
2717	5322 122 32531	100pF 5% 50V
2718	4822 122 33575	220pF 5% 63V
2719	5322 122 32531	100pF 5% 50V
2720	4822 122 33575	220pF 5% 63V
2721	5322 122 32531	100pF 5% 50V
2722	4822 122 33575	220pF 5% 63V
2724	5322 122 32531	100pF 5% 50V
2725	5322 122 32531	100pF 5% 50V
2726	4822 122 33575	220pF 5% 63V
2727	4822 126 14585	100nF 10% 50V
2728	4822 126 14305	100nF 10% 16V 0603
2729	4822 126 14585	100nF 10% 50V
2730	5322 122 32531	100pF 5% 50V
2731	5322 122 32531	100pF 5% 50V
2732	5322 122 32531	100pF 5% 50V
2733	5322 122 32531	100pF 5% 50V
2736	4822 124 81151	22μF 50V
2737	4822 126 14585	100nF 10% 50V
2738	4822 124 40207	100μF 20% 25V
2740	5322 126 11583	10nF 10% 50V 0603
2741	5322 126 11583	10nF 10% 50V 0603
2745	4822 126 14494	22nF 10% 25V 0603
2746	5322 126 11583	10nF 10% 50V 0603
2747	5322 126 11583	10nF 10% 50V 0603
2749	4822 126 14494	22nF 10% 25V 0603
2752	5322 126 11583	10nF 10% 50V 0603
2753	5322 126 11583	10nF 10% 50V 0603
2755	4822 126 14494	22nF 10% 25V 0603
2780	4822 126 14305	100nF 10% 16V 0603
2781	4822 126 14305	100nF 10% 16V 0603
2784	4822 126 13344	1.5nF 5% 63V
2785	4822 126 13344	1.5nF 5% 63V
2786	2222 867 15339	33pF 5% 50V 0603
2787	2222 867 15339	33pF 5% 50V 0603
2790	4822 122 33177	10nF 20% 50V
2791	4822 124 22652	2.2μF 20% 50V
2793	4822 126 14506	270pF 5% 50V 0603
2794	5322 126 11583	10nF 10% 50V 0603
2795	5322 126 11583	10nF 10% 50V 0603
2796	4822 122 33177	10nF 20% 50V
2800	4822 126 14585	100nF 10% 50V
2802	4822 126 14585	100nF 10% 50V
2807	4822 126 14585	100nF 10% 50V
2809	4822 126 14585	100nF 10% 50V
2810	4822 126 14585	100nF 10% 50V
2811	4822 124 80151	47μF 16V
2812	4822 126 14305	100nF 10% 16V 0603
2813	4822 126 14305	100nF 10% 16V 0603
2814	4822 126 14305	100nF 10% 16V 0603
2815	4822 126 14305	100nF 10% 16V 0603
2816	4822 126 14305	100nF 10% 16V 0603
2817	4822 126 14585	100nF 10% 50V
2818	4822 126 14305	100nF 10% 16V 0603
2819	4822 126 14305	100nF 10% 16V 0603
2820	4822 126 13486	15pF 2% 63V
2821	4822 126 13486	15pF 2% 63V
2822	4822 126 14585	100nF 10% 50V
2823	4822 124 80151	47μF 16V
2824	4822 126 14585	100nF 10% 50V
2825	4822 126 14585	100nF 10% 50V
2826	4822 126 14305	100nF 10% 16V 0603
2827	4822 126 14305	100nF 10% 16V 0603
2828	4822 124 80151	47μF 16V
2829	4822 126 14305	100nF 10% 16V 0603
2830	4822 126 14305	100nF 10% 16V 0603
2831	5322 126 11583	10nF 10% 50V 0603
2832	3198 016 31020	0603 25V 1nF
2833	4822 126 13486	15pF 2% 63V
2834	4822 126 13486	15pF 2% 63V
2835	4822 124 80151	47μF 16V
2836	4822 126 14305	100nF 10% 16V 0603
2837	4822 122 33177	10nF 20% 50V
2838	4822 122 33761	22pF 5% 50V
2839	4822 122 33761	22pF 5% 50V
2840	4822 124 80151	47μF 16V
2841	4822 126 14585	100nF 10% 50V
2842	4822 124 80151	47μF 16V
2843	4822 126 14305	100nF 10% 16V 0603
2844	4822 124 80151	47μF 16V
2845	4822 126 14585	100nF 10% 50V
2846	4822 124 80151	47μF 16V
2847	5322 126 10511	1nF 5% 50V
2848	4822 122 31765	100pF 2% 63V
2849	4822 126 14585	100nF 10% 50V
2850	5322 122 32531	100pF 5% 50V
2851	5322 126 10511	1nF 5% 50V
2852	5322 122 32531	100pF 5% 50V
2853	4822 124 80151	47μF 16V
2854	5322 126 10511	1nF 5% 50V
2855	4822 124 80151	47μF 16V
2856	5322 126 10511	1nF 5% 50V
2857	4822 124 80151	47μF 16V
2858	5322 126 10511	1nF 5% 50V
2859	4822 124 80151	47μF 16V
2860	4822 126 14585	100nF 10% 50V
2861	4822 124 80151	47μF 16V
2862	5322 126 10511	1nF 5% 50V
2863	4822 124 80151	47μF 16V
2864	4822 126 14585	100nF 10% 50V
2865	4822 126 14585	100nF 10% 50V
2866	4822 126 14585	100nF 10% 50V
2867	4822 124 80151	47μF 16V
2868	4822 126 14585	100nF 10% 50V
2869	4822 126 14585	100nF 10% 50V
2870	4822 124 80151	47μF 16V
2871	4822 124 80151	47μF 16V
2872	5322 122 32531	100pF 5% 50V
2873	5322 126 10511	1nF 5% 50V
2874	4822 124 80151	47μF 16V
2875	4822 126 14585	100nF 10% 50V
2876	4822 124 80151	47μF 16V
2877	5322 122 32531	100pF 5% 50V
2878	5322 126 10511	1nF 5% 50V
2879	4822 124 80151	47μF 16V
2880	5322 126 10511	1nF 5% 50V
2881	4822 124 80151	47μF 16V
2882	5322 126 10511	1nF 5% 50V
2883	5322 122 32531	100pF 5% 50V
2885	4822 122 33761	22pF 5% 50V
2886	4822 122 33761	22pF 5% 50V
2887	4822 122 33761	22pF 5% 50V
2888	4822 122 33761	22pF 5% 50V
2889	4822 122 33761	22pF 5% 50V
2890	4822 122 33761	22pF 5% 50V
2891	4822 122 33761	22pF 5% 50V
2892	4822 122 33761	22pF 5% 50V
2893	4822 122 33761	22pF 5% 50V
2894	4822 122 33761	22pF 5% 50V
2900	5322 122 32531	100pF 5% 50V
2901	4822 122 31765	100pF 2% 63V
2909	4822 123 14025	16V 2200μF 20%

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3500	4822 051 30332	3k3 5% 0.062W
3501	4822 051 30332	3k3 5% 0.062W
3504	4822 051 30121	120Ω 5% 0.062W
3505	4822 051 30103	10k 5% 0.062W
3506	4822 051 30103	10k 5% 0.062W
3507	4822 051 30103	10k 5% 0.062W
3508	4822 051 30103	10k 5% 0.062W

3510	4822 051 30103	10k 5% 0.062W
3511	4822 051 30103	10k 5% 0.062W
3513	4822 051 30103	10k 5% 0.062W
3514	4822 051 30103	10k 5% 0.062W
3515	4822 051 30562	5k6 5% 0.063W 0603
3516	4822 051 30123	12k 5% 0.062W
3517	4822 051 30562	5k6 5% 0.063W 0603
3518	4822 051 30123	12k 5% 0.062W
3530	4822 051 30682	6k8 5% 0.062W
3531	4822 051 30103	10k 5% 0.062W
3532	4822 051 30682	6k8 5% 0.062W
3533	4822 051 30103	10k 5% 0.062W
3534	4822 051 30121	120Ω 5% 0.062W
3540	4822 117 13632	100k 1% 0.62W 0603
3541	4822 051 30109	10Ω 5% 0.062W
3543	4822 051 30103	10k 5% 0.062W
3547	4822 051 30101	100Ω 5% 0.062W
3548	4822 117 13632	100k 1% 0.62W 0603
3550	4822 051 30103	10k 5% 0.062W
3551	4822 051 30393	39k 5% 0.062W
3553	4822 051 30103	10k 5% 0.062W
3554	4822 051 30101	100Ω 5% 0.062W
3555	4822 117 12925	47k 1% 0.063W 0603
3556	4822 117 12903	1k8 1% 0.063W 0603
3557	4822 051 30103	10k 5% 0.062W
3558	4822 051 30103	10k 5% 0.062W
3559	4822 051 30152	1k5 5% 0.062W
3560	4822 051 30103	10k 5% 0.062W
3561	4822 051 30103	10k 5% 0.062W
3562	4822 051 30393	39k 5% 0.062W
3563	4822 051 30103	10k 5% 0.062W
3564	4822 051 30152	1k5 5% 0.062W
3565	4822 051 30103	10k 5% 0.062W
3567	4822 051 30101	100Ω 5% 0.062W
3568	4822 051 30683	68k 5% 0.062W
3569	4822 051 30683	68k 5% 0.062W
3571	4822 051 30109	10Ω 5% 0.062W
3573	4822 051 30103	10k 5% 0.062W
3575	4822 051 30101	100Ω 5% 0.062W
3576	4822 051 30472	4k7 5% 0.062W
3577	4822 117 10834	47k 1% 0.1W
3578	4822 117 11373	100Ω 1% 0805
3580	4822 117 11817	1k2 1% 1/16W
3581	4822 117 12903	1k8 1% 0.063W 0603
3582	4822 117 11817	1k2 1% 1/16W
3583	4822 051 30103	10k 5% 0.062W
3584	4822 117 12903	1k8 1% 0.063W 0603
3585	4822 117 11817	1k2 1% 1/16W
3587	4822 051 30103	10k 5% 0.062W
3589	4822 051 30152	1k5 5% 0.062W
3590	4822 051 30103	10k 5% 0.062W
3591	4822 051 30103	10k 5% 0.062W
3593	4822 051 30103	10k 5% 0.062W
3594	4822 051 30152	1k5 5% 0.062W
3595	4822 051 30103	10k 5% 0.062W
3596	4822 051 30101	100Ω 5% 0.062W
3601	4822 051 30109	10Ω 5% 0.062W
3602	4822 117 13632	100k 1% 0.62W 0603
3603	4822 051 30103	10k 5% 0.062W
3605	4822 051 30333	33k 5% 0.062W
3606	4822 117 13632	100k 1% 0.62W 0603
3608	4822 051 30331	330Ω 5% 0.062W
3609	4822 051 30153	15k 5% 0.062W
3610	4822 117 10837	100k 1% 0.1W
3611	4822 117 10833	10k 1% 0.1W
3612	4822 051 30152	1k5 5% 0.062W
3613	4822 051 30103	10k 5% 0.062W
3614	4822 051 30153	15k 5% 0.062W
3615	4822 117 13632	100k 1% 0.62W 0603
3616	4822 117 13632	100k 1% 0.62W 0603
3617	4822 051 30103	10k 5% 0.062W
3619	4822 051 30152	1k5 5% 0.062W
3620	4822 051 30103	10k 5% 0.062W
3621	4822 051 30103	10k 5% 0.062W
3623	4822 051 30472	4k7 5% 0.062W
3624	4822 051 30391	390Ω 5% 0.062W
3625	4822 117 12902	8k2 1% 0.063W 0603
3626	4822 117 10837	100k 1% 0.1W
3627	4822 117 10837	100k 1% 0.1W
3628	4822 117 10837	100k 1% 0.1W
3629	4822 117 10837	100k 1% 0.1W
3630	4822 051 20223	22k 5% 0.1W
3631	4822 117 13632	100k 1% 0.62W 0603
3632	4822 117 12925	47k 1% 0.063W 0603
3633	4822 117 13632	100k 1% 0.62W 0603
3634	4822 051 30474	470k 5% 0.062W
3638	4822 051 30102	1k 5% 0.062W
3639	4822 051 30339	33Ω 5% 0.062W
3640	4822 051 30472	4k7 5% 0.062W
3645	4822 117 11507	6k8 1% 0.1W
3646	4822 051 20332	3k3 5% 0.1W
3647	4822 117 11507	6k8 1% 0.1W
3648	4822 051 20332	3k3 5% 0.1W
3649	4822 051 30681	680Ω 5% 0.062W
3650	4822 117 11507	6k8 1% 0.1W
3651	4822 051 30333	33k 5% 0.062W
3652	4822 117 11507	6k8 1% 0.1W
3653	4822 117 11507	6k8 1% 0.1W
3658	4822 051 30682	6k8 5% 0.062W
3659	4822 051 30222	2k2 5% 0.062W
3660	4822 051 30682	6k8 5% 0.062W
3661	4822 051 30222	2k2 5% 0.062W
3663	4822 051 20332	3k3 5% 0.1W
3664	4822 051 20332	3k3 5% 0.1W
3667	4822 117 10837	100k 1% 0.1W
3671	4822 117 10833	10k 1% 0.1W
3673	4822 117 10833	10k 1% 0.1W
3675	4822 117 10837	100k 1% 0.1W
3676	4822 117 10833	10k 1% 0.1W
3678	4822 117 10833	10k 1% 0.1W
3679	4822 117 11507	6k8 1% 0.1W
3680	4822 117 11507	6k8 1% 0.1W
3682	4822 117 10837	100k 1% 0.1W
3683	4822 051 20332	3k3 5% 0.1W
3684	4822 117 10837	100k 1% 0.1W
3685	4822 117 10837	100k 1% 0.1W
3686	4822 117 10837	100k 1% 0.1W
3687	4822 051 20332	3k3 5% 0.1W
3688	4822 117 11507	6k8 1% 0.1W
3699	4822 117 10833	10k 1% 0.1W
3700	4822 117 10833	10k 1% 0.1W
3701	4822 117 13632	100k 1% 0.62W 0603
3702	4822 051 30331	330Ω 5% 0.062W
3703	4822 051 30391	390Ω 5% 0.062W
3704	4822 117 12902	8k2 1% 0.063W 0603
3705	4822 051 30221	220Ω 5% 0.062W
3706	4822 051 30221	220Ω 5% 0.062W
3707	4822 051 20471	470Ω 5% 0.1W
3708	4822 051 20471	470Ω 5% 0.1W
3709	4822 051 20471	470Ω 5% 0.1W
3710	4822 117 10837	100k 1% 0.1W
3711	4822 117 10833	10k 1% 0.1W
3712	4822 117 10837	100k 1% 0.1W
3713	4822 117 10833	10k 1% 0.1W
3715	4822 051 20471	470Ω 5% 0.1W
3716	4822 051 20223	22k 5% 0.1W
3717	4822 051 20471	470Ω 5% 0.1W
3718	4822 051 20223	22k 5% 0.1W
3719	4822 051 20471	470Ω 5% 0.1W
3720	4822 051 20223	22k 5% 0.1W
3721	4822 051 20471	470Ω 5% 0.1W
3722	4822 051 20223	22k 5% 0.1W
3724	4822 051 20223	22k 5% 0.1W
3725	4822 051 20471	470Ω 5% 0.1W
3726	4822 051 20223	22k 5% 0.1W
3727	4822 051 30103	10k 5% 0.062W
3728	4822 051 30333	33k 5% 0.062W
3729	4822 051 30683	68k 5% 0.062W
3730	4822 117 10353	150Ω 1% 0.1W
3731	4822 051 20223	22k 5% 0.1W
3732	4822 117 10353	150Ω 1% 0.1W
3733	4822 051 20223	22k 5% 0.1W
3734	4822 117 11503	220Ω 1% 0.1W
3735	4822 117 11503	220Ω 1% 0.1W
3737	4822 051 30683	68k 5% 0.062W
3738	4822 051 20471	470Ω 5% 0.1W
3739	4822 051 20471	470Ω 5% 0.1W
3740	4822 117 12902	8k2 1% 0.063W 0603
3741	4822 117 12902	8k2 1% 0.063W 0603
3742	4822 051 30392	3k9 5% 0.063W 0603
3743	4822 051 30101	100Ω 5% 0.062W
3744	4822 051 30271	270Ω 5% 0.062W
3745	4822 051 30102	1k 5% 0.062W
3746	4822 117 12902	8k2 1% 0.063W 0603
3747	4822 117 12902	8k2 1% 0.063W 0603
3748	4822 051 30392	3k9 5% 0.063W 0603
3749	4822 051 30101	100Ω 5% 0.062W
3750	4822 051 30271	270Ω 5% 0.062W
3751	4822 051 30102	1k 5% 0.062W
3752	4822 117 12902	8k2 1% 0.063W 0603
3753	4822 117 12902	8k2 1% 0.063W 0603
3754	4822 051 30392	3k9 5% 0.063W 0603
3755	4822 051 30101	100Ω 5% 0.062W
3756	4822 051 30271	270Ω 5% 0.062W
3757	4822 051 30102	1k 5% 0.062W
3758	4822 051 30472	4k7 5% 0.062W
3759	4822 051 30472	4k7 5% 0.062W
3760	4822 051 30472	4k7 5% 0.062W
3761	4822 117 10837	100k 1% 0.1W
3762	4822 051 20223	22k 5% 0.1W
3763	4822 051 20472	4k7 5% 0.1W
3764	4822 117 11449	2k2 5% 0.1W 0805
3766	4822 051 20561	560Ω 5% 0.1W
3769	4822 051 20561	560Ω 5% 0.1W
3784	4822 051 10102	1k 2% 0.25W
3785	4822 051 10102	1k 2% 0.25W
3786	4822 051 30332	3k3 5% 0.062W
3787	4822 051 30682	6k8 5% 0.062W
3788	4822 051 30332	3k3 5% 0.062W
3789	4822 051 30682	6k8 5% 0.062W
3790	4822 051 20121	120Ω 5% 0.1W
3791	4822 051 30102	1k 5% 0.062W
3792	4822 051 30393	39k 5% 0.062W
3793	4822 051 30103	10k 5% 0.062W
3795	4822 051 30223	22k 5% 0.062W
3796	4822 051 20121	120Ω 5% 0.1W
3799	4822 051 20223	22k 5% 0.1W
3800	4822 117 11927	75Ω 1% 0.1W
3801	4822 117 11927	75Ω 1% 0.1W
3803	4822 117 11151	1Ω 5%
3804	4822 051 20105	1M 5% 0.1W
3805	4822 117 10833	10k 1% 0.1W
3807	4822 051 30101	100Ω 5% 0.062W
3808	4822 051 30103	10k 5% 0.062W
3809	4822 051 30101	100Ω 5% 0.062W
3810	4822 117 11373	100Ω 1% 0805
3811	4822 051 30101	100Ω 5% 0.062W
3812	4822 117 11373	100Ω 1% 0805
3813	4822 051 30101	100Ω 5% 0.062W
3814	4822 117 11373	100Ω 1% 0805
3815	4822 117 11373	100Ω 1% 0805
3816	4822 051 30103	10k 5% 0.062W
3817	4822 051 30103	10k 5% 0.062W
3818	4822 051 30103	10k 5% 0.062W
3819	4822 051 30103	10k 5% 0.062W
3820	4822 051 30103	10k 5% 0.062W
3821	4822 051 30103	10k 5% 0.062W
3822	4822 117 12984	3Ω3 5% 0.125W 1206
3823	4822 117 12984	3Ω3 5% 0.125W 1206
3824	4822 117 11148	56k 1% 0.1W
3825	4822 051 20334	330k 5% 0.1W
3826	4822 051 20334	330k 5% 0.1W
3827	4822 117 11927	75Ω 1% 0.1W
3828	4822 051 30562	5k6 5% 0.063W 0603
3829	4822 051 30562	5k6 5% 0.063W 0603
3830	4822 051 30123	12k 5% 0.062W
3831	4822 051 30123	12k 5% 0.062W
3834	4822 051 30151	150Ω 5% 0.062W
3835	4822 051 20333	33k 5% 0.1W
3836	3198 021 52240	220k 5% 0805
3837	4822 117 11373	100Ω 1% 0805
3838	4822 117 12984	3Ω3 5% 0.125W 1206
3839	4822 051 30103	10k 5% 0.062W
3840	4822 051 30103	10k 5% 0.062W
3841	4822 051 30103	10k 5% 0.062W
3842	4822 051 30103	10k 5% 0.062W
3843	4822 051 30103	10k 5% 0.062W
3844	4822 117 10833	10k 1% 0.1W
3848	4822 051 20105	1M 5% 0.1W
3849	4822 051 30102	1k 5% 0.062W
3850	4822 117 10833	10k 1% 0.1W
3851	4822 117 12984	3Ω3 5% 0.125W 1206
3852	4822 117 13572	22Ω 5% 1206
3854	4822 117 10833	10k 1% 0.1W
3855	4822 117 12984	3Ω3 5% 0.125W 1206
3856	4822 117 13572	22Ω 5% 1206
3857	4822 117 11373	100Ω 1% 0805
3858	4822 051 30103	10k 5% 0.062W
3859	4822 051 30103	10k 5% 0.062W
3861	4822 117 10833	10k 1% 0.1W
3863	4822 117 10833	10k 1% 0.1W
3864	4822 117 11373	100Ω 1% 0805
3865	4822 051 30103	10k 5% 0.062W
3866	4822 117 10833	10k 1% 0.1W
3868	4822 117 11373	100Ω 1% 0805
3869	4822 117 10833	10k 1% 0.1W
3870	4822 117 11373	100Ω 1% 0805
3871	4822 117 10833	10k 1% 0.1W
3872	4822 117 11373	100Ω 1% 0805
3873	4822 117 10833	10k 1% 0.1W
3874	4822 117 11373	100Ω 1% 0805
3875	4822 117 10833	10k 1% 0.1W
3876	4822 117 12984	3Ω3 5% 0.125W 1206
3877	4822 117 12984	3Ω3 5% 0.125W 1206
3878	4822 117 10837	100k 1% 0.1W
3879	4822 051 20684	680k 5% 0.1W
3880	4822 117 10837	100k 1% 0.1W
3881	4822 051 20105	1M 5% 0.1W
3882	4822 117 11373	100Ω 1% 0805
3883	4822 117 10833	10k 1% 0.1W
3884	4822 117 11373	100Ω 1% 0805
3885	4822 117 10833	10k 1% 0.1W
3886	4822 051 30101	100Ω 5% 0.062W
3888	4822 051 30103	10k 5% 0.062W
3889	4822 117 11373	100Ω 1% 0805
3890	4822 051 30101	100Ω 5% 0.062W
3891	4822 051 20472	4k7 5% 0.1W
3892	4822 051 30101	100Ω 5% 0.062W
3893	4822 051 30101	100Ω 5% 0.062W
3894	4822 051 30101	100Ω 5% 0.062W
4xxx	4822 051 10008	Jumper 1206
4xxx	4822 051 20008	Jumper 0805

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5703	4822 157 11876	6.8μH 10% 0805
5704	4822 157 11876	6.8μH 10% 0805
5801	4822 157 71411	3.3μH 10%

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6525	4822 130 11423	PLVA2656A
6600	4822 130 83757	MCL4148
6637	4822 130 83757	MCL4148
6638	4822 130 83757	MCL4148
6708	9322 129 38685	BZM55-C6V8
6709	9322 129 38685	BZM55-C6V8
6710	9322 129 39685	BZM55-C8V2
6715	9322 129 40685	BZM55-C10
6716	9322 129 40685	BZM55-C10
6717	9322 129 40685	BZM55-C10
6718	9322 129 40685	BZM55-C10
6719	9322 129 40685	BZM55-C10
6720	9322 129 40685	BZM55-C10
6721	9322 129 40685	BZM55-C10
6722	9322 129 40685	BZM55-C10
6723	9322 129 40685	BZM55-C10
6724	9322 129 40685	BZM55-C10
6725	9322 129 40685	BZM55-C10
6726	9322 129 40685	BZM55-C10
6730	9322 129 40685	BZM55-C10
6731	9322 129 40685	BZM55-C10
6732	9322 129 40685	BZM55-C10
6733	9322 129 40685	BZM55-C10
6734	4822 130 11423	PLVA2656A
6801	4822 209 16978	LF33CV

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7505	4822 209 30095	LM833D
7510	4822 130 60511	BC847B
7512	4822 130 60511	BC847B
7540	9322 127 49668	TDA7438D
7541	4822 209 30095	LM833D
7543	4822 209 30095	LM833D
7544	4822 209 30095	LM833D
7565	4822 209 30095	LM833D
7570	9322 127 49668	TDA7438D
7595	4822 209 30095	LM833D
7600	9322 127 49668	TDA7438D
7601	4822 130 60511	BC847B
7602	4822 130 60511	BC847B
7603	4822 130 60511	BC847B
7604	4822 130 60373	BC856B
7605	4822 130 60511	BC847B
7610	4822 130 60511	BC847B
7611	4822 130 60511	BC847B
7625	4822 209 30095	LM833D
7630	5322 209 11102	HEF4052BT
7635	4822 209 30095	LM833D
7665	5322 209 11102	HEF4052BT
7667	4822 130 60511	BC847B
7675	4822 130 60511	BC847B
7679	4822 209 30095	LM833D
7685	5322 209 11102	HEF4052BT
7690	4822 209 13252	PCF8574TS/F3
7695	5322 209 11102	HEF4052BT
7696	4822 130 60511	BC847B
7705	5322 209 81856	LM7912CT
7706	4822 209 81726	MC7812CT
7707	4822 130 60511	BC847B
7708	4822 130 60511	BC847B
7709	4822 130 60511	BC847B
7710	4822 130 60511	BC847B
7712	4822 130 60511	BC847B
7713	4822 130 60511	BC847B
7740	4822 209 30095	LM833D
7780	4822 209 30095	LM833D
7781	4822 130 60373	BC856B
7800	9352 317 00118	74LVC125AD
7801	9352 629 51557	SAA2505H/M1 (PHSE)
7802	4822 209 14863	LC8904Q
7804	4822 209 30095	LM833D
7805	4822 209 17423	UAD1328T
7806	9352 617 90118	UDA1344TS
7807	4822 130 60511	BC847B

Side I/O Panel [O]

Various

0044	3104 304 23481	Bracket side I/O FL11
1326	4822 267 10975	3P male
1327	4822 267 31014	Socket headphone 3.5mm
1328	2422 026 05133	Socket SVHS
1333	2422 025 12485	11P male
1344	4822 267 10735	3P male
1346	2422 025 16382	03P male black
8333	4822 320 12505	Cable 11P 820mM
8344	3104 301 09451	Cable 3P 560mm white
8346	3104 311 00131	Cable 3P 560mm black

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2804	5322 122 32531	100pF 5% 50V
2805	5322 122 32531	100pF 5% 50V
2807	4822 126 14076	220nF 20-80% 25V
2810	4822 126 12105	33nF 5% 50V
2811	4822 124 40207	100μF 20% 25V
2813	4822 124 22652	2.2μF 20% 50V
2832	4822 122 33177	10nF 20% 50V
2834	4822 122 33177	10nF 20% 50V

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3801	4822 117 11927	75Ω 1% 0.1W
3803	4822 050 11002	1k 1% 0.4W
3804	4822 050 11002	1k 1% 0.4W
3808	4822 051 20008	Jumper 0805
3809	4822 051 20008	Jumper 0805
3810	4822 051 20684	680k 5% 0.1W
3811	4822 051 20393	39k 5% 0.1W
3812	4822 051 20154	150k 5% 0.1W
3813	4822 051 20392	3k9 5% 0.1W
3814	4822 117 11449	2k2 5% 0.1W 0805
3815	4822 051 20399	39Ω 5% 0.1W
3816	4822 051 20399	39Ω 5% 0.1W
3826	4822 116 52206	120Ω 5% 0.5W
3827	4822 116 52206	120Ω 5% 0.5W
3828	4822 116 52206	120Ω 5% 0.5W
3829	4822 116 52206	120Ω 5% 0.5W
3830	4822 050 21003	10k 1% 0.6W
3842	4822 050 21003	10k 1% 0.6W
3845	4822 051 20472	4k7 5% 0.1W
3846	4822 117 10833	10k 1% 0.1W
3847	4822 117 10833	10k 1% 0.1W
3848	4822 051 20562	5k6 5% 0.1W 0805
3849	4822 051 20332	3k3 5% 0.1W
4xxx	4822 051 10008	Jumper 1206
4xxx	4822 051 20008	Jumper 0805

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5800	4822 157 11228	100μH 5%

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6801	9322 129 38685	BZM55-C6V8
6802	9322 129 38685	BZM55-C6V8
6803	9322 129 40685	BZM55-C10
6804	9322 129 40685	BZM55-C10
6805	9322 129 40685	BZM55-C10
6806	9322 129 40685	BZM55-C10
6807	9322 129 38685	BZM55-C6V8
6808	9322 129 38685	BZM55-C6V8

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7811	4822 130 60373	BC856B
7812	4822 130 60373	BC856B
7813	4822 130 60511	BC847B

Top Control Panel [P]

Various

0055	3104 307 98241	Top control keypad FL11
0057	3104 304 23431	Topcontrol bottom FL11
0111	3104 304 24851	Topcontrol ESD foil
8345	3104 301 07771	Cable 3P 1200mm white
8345	3104 311 01101	Cable 3P 1000mm

Autoscavem Panel [SC]

Various

0360	4822 267 10967	3P
0361	4822 267 10967	3P
1382	2422 025 17408	9P male

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2006	4822 126 14305	100nF 10% 16V 0603
2008	4822 126 14494	22nF 10% 25V 0603
2010	4822 126 14305	100nF 10% 16V 0603
2012	4822 126 14494	22nF 10% 25V 0603
2014	4822 126 14494	22nF 10% 25V 0603
2016	3198 016 33380	3.3pF 50V 0603
2020	4822 126 14494	22nF 10% 25V 0603
2022	3198 017 41050	1μF 10V 0603
2024	4822 126 14494	22nF 10% 25V 0603
2026	3198 017 41050	1μF 10V 0603
2028	3198 017 41050	1μF 10V 0603
2038	4822 126 14494	22nF 10% 25V 0603
2040	4822 126 14225	56pF 5% 50V 0603
2200	4822 126 13193	4.7nF 10% 63V
2202	5322 126 11578	1nF 10% 50V 0603
2204	3198 017 41050	1μF 10V 0603
2206	3198 017 41050	1μF 10V 0603
2208	4822 124 41584	100μF 20% 10V
2600	4822 124 80791	470μF 20% 16V

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3000	4822 051 30101	100Ω 5% 0.062W
3002	4822 051 30101	100Ω 5% 0.062W
3004	4822 051 30101	100Ω 5% 0.062W
3006	4822 051 30222	2k2 5% 0.062W
3008	4822 051 30222	2k2 5% 0.062W
3010	4822 051 30222	2k2 5% 0.062W
3012	4822 051 30562	5k6 5% 0.063W 0603
3014	4822 051 30272	2k7 5% 0.062W
3016	4822 051 30153	15k 5% 0.062W
3018	4822 117 12903	1k8 1% 0.063W 0603
3020	4822 051 30561	560Ω 5% 0.062W
3022	4822 051 30393	39k 5% 0.062W
3024	4822 051 30123	12k 5% 0.062W
3028	4822 051 30223	22k 5% 0.062W
3030	4822 051 30683	68k 5% 0.062W
3032	4822 051 20182	1k8 5% 0.1W
3034	4822 051 30222	2k2 5% 0.062W
3036	4822 051 30332	3k3 5% 0.062W
3038	4822 051 30561	560Ω 5% 0.062W
3040	4822 117 12925	47k 1% 0.063W 0603
3042	4822 051 30682	6k8 5% 0.062W
3044	4822 051 10102	1k 2% 0.25W
3046	4822 117 12903	1k8 1% 0.063W 0603
3048	4822 117 12903	1k8 1% 0.063W 0603
3050	4822 051 30561	560Ω 5% 0.062W
3052	4822 051 30561	560Ω 5% 0.062W
3054	4822 051 30222	2k2 5% 0.062W
3056	4822 051 30222	2k2 5% 0.062W
3058	4822 051 30681	680Ω 5% 0.062W
3060	4822 051 30681	680Ω 5% 0.062W
3062	4822 051 30222	2k2 5% 0.062W
3064	4822 117 12971	15Ω 5% 0.62W 0603
3066	4822 051 30123	12k 5% 0.062W
3068	4822 051 30681	680Ω 5% 0.062W
3070	4822 117 12902	8k2 1% 0.063W 0603
3072	4822 051 30152	1k5 5% 0.062W
3074	4822 051 30101	100Ω 5% 0.062W
3076	4822 117 11817	1k2 1% 1/16W
3078	4822 051 30102	1k 5% 0.062W
3080	4822 117 12925	47k 1% 0.063W 0603
3082	4822 051 30682	6k8 5% 0.062W
3084	4822 051 30102	1k 5% 0.062W
3086	4822 051 30222	2k2 5% 0.062W
3088	4822 051 30102	1k 5% 0.062W
3090	4822 051 30222	2k2 5% 0.062W
3092	4822 051 30393	39k 5% 0.062W
3094	4822 051 30223	22k 5% 0.062W
3096	4822 117 11449	2k2 5% 0.1W 0805
3102	4822 051 30152	1k5 5% 0.062W
3106	4822 051 30102	1k 5% 0.062W
3108	4822 117 12925	47k 1% 0.063W 0603
3110	4822 051 30472	4k7 5% 0.062W
3112	4822 051 30392	3k9 5% 0.063W 0603
3114	4822 051 30181	180Ω 5% 0.062W
3116	4822 051 30102	1k 5% 0.062W
3118	4822 051 30333	33k 5% 0.062W
3120	4822 051 30333	33k 5% 0.062W
3200	4822 051 30152	1k5 5% 0.062W
3202	4822 051 30271	270Ω 5% 0.062W
3204	4822 117 12925	47k 1% 0.063W 0603
3206	4822 051 30682	6k8 5% 0.062W
3208	4822 117 12903	1k8 1% 0.063W 0603
3210	4822 051 30681	680Ω 5% 0.062W
3212	4822 051 30123	12k 5% 0.062W
3214	4822 051 30474	470k 5% 0.062W
3216	4822 117 12925	47k 1% 0.063W 0603
3218	4822 051 30153	15k 5% 0.062W
3220	4822 051 30153	15k 5% 0.062W

3222	4822 051 30682	6k8 5% 0.062W
3224	4822 117 11817	1k2 1% 1/16W
3226	4822 051 30152	1k5 5% 0.062W
3228	4822 051 30101	100Ω 5% 0.062W
3230	4822 051 30103	10k 5% 0.062W
3232	4822 051 30153	15k 5% 0.062W
3234	4822 117 12968	820Ω 5% 0.62W
3236	4822 051 30222	2k2 5% 0.062W
3238	4822 117 12139	22Ω 5% 0.062W
3240	4822 051 30472	4k7 5% 0.062W
3242	4822 051 30689	68Ω 5% 0.063W 0603
3244	4822 117 13632	100k 1% 0.62W 0603
3500	4822 051 30101	100Ω 5% 0.062W
3502	4822 051 30101	100Ω 5% 0.062W
3600	4822 117 11151	1Ω 5%

5600	4822 157 11778	5µH 6 10%

6000	5322 130 80119	BBY40

7000	4822 130 60373	BC856B
7002	4822 130 60373	BC856B
7004	4822 130 60373	BC856B
7006	5322 130 42718	BFS20
7008	4822 130 60383	BF824
7010	5322 130 42718	BFS20
7012	5322 130 42718	BFS20
7014	4822 130 60383	BF824
7016	5322 130 42718	BFS20
7018	5322 130 42718	BFS20
7020	4822 130 60383	BF824
7022	5322 130 42718	BFS20
7024	5322 130 42718	BFS20
7026	5322 130 42718	BFS20
7028	5322 130 42718	BFS20
7030	5322 130 42718	BFS20
7032	5322 130 42718	BFS20
7038	5322 130 42718	BFS20
7040	5322 130 42718	BFS20
7042	4822 130 60383	BF824
7200	4822 130 60511	BC847B
7202	4822 130 60373	BC856B
7204	4822 130 60373	BC856B
7206	5322 130 42718	BFS20
7208	4822 130 60511	BC847B
7210	5322 130 42718	BFS20
7212	4822 130 60511	BC847B
7500	5322 209 90559	TDA8444T/N4

Wireless Transmitter [R]

Various

0320	4304 078 89100	Transmitter 433MHz
0320	4304 078 89110	Transmitter 864MHz

2100	4822 126 14043	1µF 20% 16V
2101	4822 126 14043	1µF 20% 16V
2102	4822 126 13222	390pF 2% 63V
2103	4822 126 13222	390pF 2% 63V
2104	4822 126 13222	390pF 2% 63V
2105	4822 126 13222	390pF 2% 63V
2106	4822 126 13222	390pF 2% 63V
2107	4822 126 13222	390pF 2% 63V
2108	4822 126 13222	390pF 2% 63V
2109	4822 126 13222	390pF 2% 63V
2110	4822 126 10326	180pF 5% 63V
2111	4822 126 10326	180pF 5% 63V
2112	4822 126 10326	180pF 5% 63V
2113	4822 126 10326	180pF 5% 63V
2114	4822 124 22652	2.2µF 20% 50V
2115	4822 124 22652	2.2µF 20% 50V
2116	5322 122 32268	470pF 10% 50V
2117	5322 122 32268	470pF 10% 50V
2118	5322 126 10223	4.7nF 10% 63V
2119	5322 126 10223	4.7nF 10% 63V
2120	4822 124 40248	10µF 20% 63V
2121	4822 124 40248	10µF 20% 63V
2122	4822 121 51319	1µF 10% 63V
2123	4822 121 51319	1µF 10% 63V
2124	4822 124 22652	2.2µF 20% 50V
2125	4822 124 22652	2.2µF 20% 50V
2126	5322 122 32654	22nF 10% 63V
2127	5322 122 32654	22nF 10% 63V
2128	4822 124 22652	2.2µF 20% 50V
2129	4822 124 22652	2.2µF 20% 50V
2130	4822 124 22652	2.2µF 20% 50V
2131	4822 124 22652	2.2µF 20% 50V
2132	4822 126 13692	47pF 1% 63V
2133	4822 126 13692	47pF 1% 63V
2134	4822 124 40248	10µF 20% 63V
2135	4822 124 40248	10µF 20% 63V
2136	5322 122 32268	470pF 10% 50V
2137	4822 124 81151	22µF 50V
2138	5322 122 31647	1nF 10% 63V
2139	5322 122 32268	470pF 10% 50V
2141	4822 126 13482	470nF 80/20% 16V
2142	4822 124 81151	22µF 50V
2143	4822 122 32535	680pF 10% 63V
2144	4822 126 13695	82pF 1% 63V
2147	5322 122 32654	22nF 10% 63V
2150	4822 126 13473	220nF 80-20% 50V
2151	4822 126 13692	47pF 1% 63V
2152	4822 126 13692	47pF 1% 63V
2153	4822 126 14585	100nF 10% 50V
2154	4822 126 14585	100nF 10% 50V
2155	4822 126 14585	100nF 10% 50V
2156	4822 124 40196	220µF 20% 16V
2157	4822 124 40196	220µF 20% 16V
2158	4822 124 40207	100µF 20% 25V
2162	5322 122 32654	22nF 10% 63V
2163	4822 126 13473	220nF 80-20% 50V
2164	4822 126 14585	100nF 10% 50V
2165	4822 126 14585	100nF 10% 50V
2166	5322 122 32654	22nF 10% 63V
2167	5322 122 32448	10pF 5% 63V
2168	4822 126 13482	470nF 80/20% 16V
2169	4822 122 32535	680pF 10% 63V
2170	4822 122 32535	680pF 10% 63V
2173	4822 122 33177	10nF 20% 50V
2174	4822 126 13473	220nF 80-20% 50V
2175	4822 122 33575	220pF 5% 63V
2176	4822 122 33575	220pF 5% 63V
2178	5322 122 32654	22nF 10% 63V
2179	5322 122 32654	22nF 10% 63V
2180	5322 122 32654	22nF 10% 63V
2181	4822 126 13692	47pF 1% 63V
2182	4822 126 13692	47pF 1% 63V
2183	5322 122 32654	22nF 10% 63V
2185	4822 126 13692	47pF 1% 63V
2186	4822 126 13473	220nF 80-20% 50V
2188	4822 126 13692	47pF 1% 63V
2189	5322 122 31863	330pF 5% 63V

3100	4822 117 10837	100k 1% 0.1W
3101	4822 117 10837	100k 1% 0.1W
3102	4822 051 20392	3k9 5% 0.1W
3103	4822 051 20392	3k9 5% 0.1W
3104	4822 050 21303	13k 1% 0.6W
3105	4822 050 21303	13k 1% 0.6W
3106	4822 050 21303	13k 1% 0.6W
3107	4822 050 21303	13k 1% 0.6W
3108	4822 050 26492	6k49 1% 0.6W
3109	4822 050 26492	6k49 1% 0.6W
3110	4822 051 20184	180k 5% 0.1W
3111	4822 051 20184	180k 5% 0.1W
3112	4822 051 20223	22k 5% 0.1W
3113	4822 051 20223	22k 5% 0.1W
3114	4822 050 23303	33k 1% 0.6W
3115	4822 051 20333	33k 5% 0.1W
3116	4822 051 20333	33k 5% 0.1W
3117	4822 051 20333	33k 5% 0.1W
3118	4822 051 20273	27k 5% 0.1W
3119	4822 051 20273	27k 5% 0.1W
3120	4822 051 20273	27k 5% 0.1W
3121	4822 051 20273	27k 5% 0.1W
3122	4822 117 10834	47k 1% 0.1W
3123	4822 117 10834	47k 1% 0.1W
3124	4822 116 83933	15k 1% 0.1W
3125	4822 116 83933	15k 1% 0.1W
3126	4822 051 10102	1k 2% 0.25W
3127	4822 051 10102	1k 2% 0.25W
3128	4822 051 20332	3k3 5% 0.1W
3129	4822 051 20332	3k3 5% 0.1W
3130	4822 117 10833	10k 1% 0.1W
3131	4822 117 10833	10k 1% 0.1W
3132	4822 051 20683	68k 5% 0.1W
3133	4822 051 20683	68k 5% 0.1W
3134	4822 117 10965	18k 1% 0.1W
3135	4822 117 10965	18k 1% 0.1W
3136	4822 117 10965	18k 1% 0.1W
3137	4822 117 10965	18k 1% 0.1W
3138	4822 117 11507	6k8 1% 0.1W
3139	4822 117 11507	6k8 1% 0.1W
3140	4822 051 10102	1k 2% 0.25W
3141	4822 051 10102	1k 2% 0.25W
3142	4822 051 20474	470k 5% 0.1W
3143	4822 117 10837	100k 1% 0.1W
3144	4822 051 20333	33k 5% 0.1W
3145	4822 116 83933	15k 1% 0.1W
3150	4822 051 20333	33k 5% 0.1W
3151	4822 116 83933	15k 1% 0.1W
3152	4822 116 83933	15k 1% 0.1W
3153	4822 051 20333	33k 5% 0.1W
3154	4822 051 20822	8k2 5% 0.1W
3155	4822 051 20392	3k9 5% 0.1W
3156	4822 051 20822	8k2 5% 0.1W
3157	4822 100 11676	10k 30% 0.2W
3158	4822 051 20471	470Ω 5% 0.1W
3159	4822 051 20471	470Ω 5% 0.1W
3160	4822 116 52175	100Ω 5% 0.5W
3161	4822 116 52175	100Ω 5% 0.5W
3162	4822 051 20008	jumper 0805
3165	4822 051 20008	jumper 0805
3168	4822 051 20332	3k3 5% 0.1W
3169	4822 117 10834	47k 1% 0.1W
3170	4822 051 20472	4k7 5% 0.1W
3171	4822 051 20391	390Ω 5% 0.1W
3172	4822 051 10102	1k 2% 0.25W
3175	4822 117 10837	100k 1% 0.1W
3176	4822 051 10102	1k 2% 0.25W
3177	4822 051 20223	22k 5% 0.1W
3180	4822 117 13579	220k 1% 0.1W
3181	4822 117 13579	220k 1% 0.1W
3182	4822 051 20474	470k 5% 0.1W
3184	4822 051 10102	1k 2% 0.25W
3185	4822 117 10833	10k 1% 0.1W
3188	4822 051 20472	4k7 5% 0.1W
3189	4822 117 10837	100k 1% 0.1W
3190	4822 051 20472	4k7 5% 0.1W
3191	4822 051 20223	22k 5% 0.1W
3193	4822 117 10834	47k 1% 0.1W
3194	4822 051 20008	Jumper 0805
3196	4822 051 20472	4k7 5% 0.1W
3197	4822 051 20472	4k7 5% 0.1W
3198	4822 051 20008	
3199	4822 051 20561	560Ω 5% 0.1W
3199	4822 051 20562	5k6 5% 0.1W
3200	4822 051 20472	4k7 5% 0.1W
3201	4822 051 20471	470Ω 5% 0.1W
3202	4822 051 20471	470Ω 5% 0.1W
3203	4822 051 10102	1k 2% 0.25W
3204	4822 051 10102	1k 2% 0.25W
3205	4822 051 10102	1k 2% 0.25W
3206	4822 051 20471	470Ω 5% 0.1W
3207	4822 117 10833	10k 1% 0.1W
4xxx	4822 051 10008	jumper 1206
4xxx	4822 051 20008	jumper 0805

5101	2422 543 01048	Crystal 12.8MHz
5102	2422 535 94915	33nH 5%
5105	2422 535 94828	27nH 5%
5107	4822 157 71206	Bead 100MHz 600Ω

6101	4822 130 34121	BAX18
6102	4822 130 61219	BZX79-B10
6106	4822 130 11423	PLVA2656A
6107	4822 130 83757	BAS216

7101	9322 137 78682	NJM2060D
7102	9338 436 90602	SA572N
7103	4822 209 70157	NJM4560DD
7105	3104 218 80310	µP S83C751-4N24
7106	4822 209 17338	L78L08ACZ
7108	4822 130 60373	BC856B
7109	4822 209 83357	NJM4560M
7110	4822 130 60511	BC847B
7112	9337 140 10653	74HC4060D
7113	4822 209 60792	74HC4053D
7114	4822 130 60511	BC847B
7115	4822 209 83357	NJM4560M
7116	4822 130 60511	BC847B
7117	4822 130 60373	BC856B
7118	4822 130 60511	BC847B
7119	4822 130 60511	BC847B

Wireless Receiver [U]

Various

0438	3104 217 06200	Receiver panel 433MHz
0438	3104 217 06050	Receiver panel 864MHz
1701	4822 277 11671	Slide switch 1P 7pos

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2701	5322 122 32654	22nF 10% 63V
2702	5322 122 32654	22nF 10% 63V
2703	4822 126 13751	47nF 10% 63V
2704	4822 126 13473	220nF 80-20% 50V
2705	4822 126 14585	100nF 10% 50V
2706	5322 122 32654	22nF 10% 63V
2707	4822 126 14585	100nF 10% 50V
2708	4822 124 40769	4.7µF 20% 100V
2709	5322 122 32531	100pF 5% 50V
2710	4822 126 13473	220nF 80-20% 50V
2711	4822 121 41854	150nF 5% 63V
2712	4822 126 13188	15nF 5% 63V
2713	2222 464 90014	180pF 2% 630V
2714	4822 124 41751	47µF 20% 50V
2715	4822 124 40769	4.7µF 20% 100V
2716	4822 126 13473	220nF 80-20% 50V
2717	5322 122 32654	22nF 10% 63V
2718	4822 126 13473	220nF 80-20% 50V
2719	4822 122 33216	270pF 5% 50V
2720	4822 122 33216	270pF 5% 50V
2721	4822 126 13473	220nF 80-20% 50V
2722	4822 126 14585	100nF 10% 50V
2723	4822 124 22652	2.2µF 20% 50V
2731	4822 124 22652	2.2µF 20% 50V
2741	4822 124 22652	2.2µF 20% 50V
2750	4822 126 13473	220nF 80-20% 50V
2751	5322 122 32531	100pF 5% 50V
2752	4822 126 13473	220nF 80-20% 50V
2753	5322 122 32654	22nF 10% 63V
2754	4822 124 40769	4.7µF 20% 100V
2755	5322 122 32654	22nF 10% 63V
2762	4822 126 13692	47pF 1% 63V
2770	4822 124 40769	4.7µF 20% 100V
2771	5322 122 32654	22nF 10% 63V
2772	4822 124 22652	2.2µF 20% 50V
2773	4822 124 22652	2.2µF 20% 50V
2774	4822 121 51319	1µF 10% 63V
2775	5322 122 32654	22nF 10% 63V
2776	4822 124 22652	2.2µF 20% 50V
2777	4822 124 22652	2.2µF 20% 50V
2778	4822 121 51319	1µF 10% 63V
2779	5322 122 32654	22nF 10% 63V
2780	4822 124 40248	10µF 20% 63V
2781	4822 124 40769	4.7µF 20% 100V
2782	5322 126 10223	4.7nF 10% 63V
2783	4822 124 22652	2.2µF 20% 50V
2786	4822 124 40248	10µF 20% 63V
2787	4822 124 40769	4.7µF 20% 100V
2788	5322 126 10223	4.7nF 10% 63V
2789	4822 124 22652	2.2µF 20% 50V
2790	4822 126 14585	100nF 10% 50V
2792	4822 122 33575	220pF 5% 63V
2793	4822 122 33575	220pF 5% 63V
2794	4822 122 33575	220pF 5% 63V

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3701	4822 051 20471	470Ω 5% 0.1W
3702	4822 117 13577	330Ω 1% 1.25W
3703	4822 117 11449	2k2 1% 0.1W
3704	4822 051 20471	470Ω 5% 0.1W
3705	4822 051 20101	100Ω 5% 0.1W
3706	4822 051 20332	3k3 5% 0.1W
3707	4822 117 13577	330Ω 1% 1.25W
3708	4822 051 20478	4Ω7 5% 0.1W
3709	4822 117 11448	180Ω 1% 0.1W
3710	4822 051 20391	390Ω 5% 0.1W
3711	4822 100 12159	100k 30%
3712	4822 117 10833	10k 1% 0.1W
3713	4822 117 10833	10k 1% 0.1W
3714	4822 051 20223	22k 5% 0.1W
3715	4822 117 11148	56k 1% 0.1W
3716	4822 051 20332	3k3 5% 0.1W
3717	4822 116 52264	27k 5% 0.5W
3718	4822 116 52264	27k 5% 0.5W
3719	4822 117 10837	100k 1% 0.1W
3720	4822 117 10837	100k 1% 0.1W
3721	4822 051 20273	27k 5% 0.1W
3722	4822 051 20472	4k7 5% 0.1W
3723	4822 051 20273	27k 5% 0.1W
3723	4822 117 10965	18k 1% 0.1W
3724	4822 051 20393	39k 5% 0.1W
3724	4822 117 10837	100k 1% 0.1W
3726	4822 117 11449	2k2 1% 0.1W
3727	4822 051 20562	5k6 5% 0.1W
3728	4822 051 20562	5k6 5% 0.1W
3729	4822 051 20474	470k 5% 0.1W
3730	4822 051 20223	22k 5% 0.1W
3731	4822 051 20683	68k 5% 0.1W
3732	4822 051 20562	5k6 5% 0.1W
3733	4822 051 20392	3k9 5% 0.1W
3734	4822 051 20561	560Ω 5% 0.1W
3735	4822 051 20391	390Ω 5% 0.1W
3736	2120 363 90145	22K 30%
3737	4822 051 20472	4k7 5% 0.1W
3738	4822 051 20472	4k7 5% 0.1W
3739	4822 117 11449	2k2 1% 0.1W
3740	4822 051 20223	22k 5% 0.1W
3741	4822 117 11449	2k2 1% 0.1W
3742	4822 051 20562	5k6 5% 0.1W
3743	4822 051 20392	3k9 5% 0.1W
3744	4822 051 20561	560Ω 5% 0.1W
3745	4822 051 20391	390Ω 5% 0.1W
3746	4822 051 20472	4k7 5% 0.1W
3747	4822 051 20101	100Ω 5% 0.1W
3748	4822 117 11449	2k2 1% 0.1W
3749	4822 117 11449	2k2 1% 0.1W
3750	4822 051 10102	1k 2% 0.25W
3751	4822 051 20472	4k7 5% 0.1W
3752	4822 051 20101	100Ω 5% 0.1W
3753	4822 117 10833	10k 1% 0.1W
3754	4822 117 10837	100k 1% 0.1W
3755	4822 117 10833	10k 1% 0.1W
3756	4822 117 10833	10k 1% 0.1W
3757	4822 117 10833	10k 1% 0.1W
3758	4822 117 10834	47k 1% 0.1W
3759	4822 117 10834	47k 1% 0.1W
3760	4822 051 20472	4k7 5% 0.1W
3761	4822 051 20101	100Ω 5% 0.1W
3762	4822 117 10833	10k 1% 0.1W
3763	4822 117 10833	10k 1% 0.1W
3771	4822 117 10833	10k 1% 0.1W
3772	4822 051 20332	3k3 5% 0.1W
3775	4822 117 10833	10k 1% 0.1W
3776	4822 051 20332	3k3 5% 0.1W
3778	4822 051 10102	1k 2% 0.25W
3779	4822 051 10102	1k 2% 0.25W
3780	4822 117 10837	100k 1% 0.1W
3781	4822 117 10965	18k 1% 0.1W
3782	4822 117 10834	47k 1% 0.1W
3783	4822 117 11449	2k2 1% 0.1W
3786	4822 117 10837	100k 1% 0.1W
3787	4822 117 10965	18k 1% 0.1W
3788	4822 117 10834	47k 1% 0.1W
3789	4822 117 11449	2k2 1% 0.1W
3792	4822 117 10837	100k 1% 0.1W
3793	4822 117 10837	100k 1% 0.1W
3794	4822 051 20472	4k7 5% 0.1W
3795	4822 117 10833	10k 1% 0.1W
3796	4822 051 20561	560Ω 5% 0.1W
3796	4822 051 20562	5k6 5% 0.1W
42xx	4822 051 10008	Jumper 1206
43xx	4822 051 20008	Jumper 0805

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5701	2422 549 43868	Coil var. 10.7MHz
5702	4822 157 11668	Filter MPX 20KHZ
5703	4822 157 11668	Filter MPX 20KHZ
5704	4822 242 72527	Crystal 4 MHz
5705	4822 157 71206	Bead 100MHz 600Ω
5706	4822 242 70665	Filter 10.7M
5707	4822 242 70665	Filter 10.7M
5708	4822 157 11172	68nH 10%

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6701	5322 130 34331	BAV70
6702	4822 130 34233	BZX79-B5V1
6703	4822 130 83757	BAS216
6704	4822 130 30621	1N4148
6705	4822 130 30621	1N4148

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7702	9350 394 00112	TDA1578A/V6
7703	4822 130 60373	BC856B
7704	4822 130 60511	BC847B
7705	4822 130 60511	BC847B
7706	4822 130 60511	BC847B
7707	5322 130 42718	BFS20
7708	3104 218 80290	µProcessor
7709	9338 436 90602	SA572N
7710	4822 209 70157	NJM4560DD
7711	4822 209 17338	L78L08ACZ
7712	4822 130 41327	BC327-40
7713	4822 130 60511	BC847B
7714	4822 209 15263	L78L06ACZ
7717	4822 130 60511	BC847B
7718	4822 130 60373	BC856B
7719	4822 130 60511	BC847B
7720	4822 130 60511	BC847B

Surround Sound Supply + Amplifier [W1] [W2] [W3] [W4]

Various

0440	4303 308 35230	Amplifier board
0011	4303 308 76220	Led holder LU53-080
0012	9390 288 60112	Spring
0013	3104 214 34571	Power button
1101	4822 267 10748	3P Male
1201	2422 025 14044	3P Male
1202	4822 265 30734	4P
1203	4303 308 99380	2P
1204	3143 008 90671	Mains switch
1205	4822 265 11253	Fuse holder
1206	4822 070 32002	Fuse 2A
1301	2422 025 04849	2P Male
1302	4822 265 10872	2P Male
1303	4822 265 30735	5P Male
1304	4822 267 10735	3P Male
1305	4822 265 41392	7P Male
1306	4822 267 31014	Headphone socket
1307	4303 308 94460	Slide switch 2P
1401	4822 265 30735	5P Male
1402	4822 267 10735	3P Male
1403	2422 025 04851	3P Male
1404	4822 267 10565	4P Male
1405	2422 025 10647	1P Male
1406	2422 025 04849	2P Male
1407	2422 025 04849	2P Male
1408	4822 071 52502	Fuse 2.5A
1409	4822 071 52502	Fuse 2.5A
8000	3139 110 30840	Cable 180mm/description>
8002	4303 301 91570	Cable 7P shielded
8003	4303 301 91580	Cable 3P shielded
8004	4303 301 00380	Cable 2P shielded
8005	3139 110 30730	Cable 3P shielded

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2201	4822 126 13838	100nF 80-20% 50V
2202	4822 126 11958	2,2nF 10% 500V
2203	4822 126 13841	1nF 20% 250V
2204	4822 122 33127	2,2nF 10% 63V
2205	5322 121 42498	680nF 5% 63V
2206	3143 018 90900	100pF 10% 1kV
2207	2222 044 36478	4,7µF 20% 400V
2208	2222 336 20105	1µF 20 275V
2209	4822 124 12056	1000µF 20% 35V
2210	4822 124 40196	220µF 20% 16V
2211	4822 126 13838	100nF 80-20% 50V
2301	4822 126 14043	1µF +80-20% 16V
2302	4822 126 14043	1µF +80-20% 16V
2303	4822 126 13751	47nF 10% 63V
2304	4822 126 13751	47nF 10% 63V
2401	4822 124 12056	1000µF 20% 35V
2402	4822 124 11912	220µF 20% 6,3V
2403	4822 124 11912	220µF 20% 6,3V
2404	4822 124 42367	3300µF 20% 35V
2405	4822 124 42367	3300µF 20% 35V
2406	4822 124 40769	4,7µF 20% 100V
2407	4822 124 40207	100µF 20% 25V
2408	4822 124 81151	22µF 50V
2409	4822 122 31947	100nF 20% 63V
2410	4822 122 31947	100nF 20% 63V
2411	4822 122 31947	100nF 20% 63V
2412	4822 122 31947	100nF 20% 63V
2413	4822 122 31947	100nF 20% 63V
2414	4822 122 31947	100nF 20% 63V
2415	4822 126 13473	220nF 80-20% 50V
2416	4822 126 13473	220nF 80-20% 50V
2420	5322 122 32268	470pF 10% 50V
2421	4822 126 13473	220nF 80-20% 50V
2422	4822 126 13473	220nF 80-20% 50V
2426	5322 122 32268	470PF 10% 50V
2427	4822 126 13473	220nF 80-20% 50V
2428	4822 126 13473	220nF 80-20% 50V
2429	5322 122 32531	100pF 5% 50V
2430	5322 122 32531	100pF 5% 50V
2431	4822 126 13473	220nF 80-20% 50V
2432	4822 126 13473	220nF 80-20% 50V

2433	5322 122 32654	22nF 10% 63V
2434	5322 122 32654	22nF 10% 63V
2435	5322 122 32531	100pF 5% 50V
2436	5322 122 32531	100pF 5% 50V
2437	4822 126 13838	100nF 80-20% 50V
2438	4822 126 13838	100nF 80-20% 50V
2439	4822 126 13838	100nF 80-20% 50V
2440	4822 126 13838	100nF 80-20% 50V
2441	4822 126 14043	1μF +80-20% 16V
2442	4822 126 13473	220nF 80-20% 50V
2443	4822 126 13482	470nF 80/20% 16V
2444	4822 126 13691	27pF 1% 63V
2445	4822 126 13691	27pF 1% 63V
2446	4822 126 13473	220nF 80-20% 50V
2447	4822 126 13838	100nF 80-20% 50V
2448	4822 126 13838	100nF 80-20% 50V
2449	4822 126 13838	100nF 80-20% 50V
2450	4822 126 13838	100nF 80-20% 50V
2451	4822 126 13473	220nF 80-20% 50V
2452	5322 122 32531	100pF 5% 50V
2453	5322 122 32531	100pF 5% 50V
2454	5322 122 32531	100pF 5% 50V
2455	5322 122 32531	100pF 5% 50V
2456	4822 122 33127	2,2nF 10% 63V

3201	4822 051 52702	2k7 1% 0,125W
3202	4822 053 21475	4M7 5% 0,5W
3203	4822 053 21225	2M2 5% 0,5W
3204	4822 051 52702	2k7 1% 0,125W
3205	4822 051 20121	120Ω 5% 0,1W
3206	4822 117 11454	820Ω 1% 0,1W
3207	4822 053 20106	10M 5% 0,25W
3208	4822 116 83883	470Ω 5% 0,5W
3209	4822 117 11449	2k2 1% 0,1W
3210	4822 117 11449	2k2 1% 0,1W
3211	4822 117 10833	10k 1% 0,1W
3212	4822 051 10472	4k7 2% 0,25W
3214	4822 117 10833	10k 1% 0,1W
3215	4822 116 52195	47Ω 5% 0,5W
3216	4822 116 52182	15Ω 5% 0,5W
3217	4822 116 52182	15Ω 5% 0,5W
3219	4822 052 10108	1Ω 5% 0,33W
3220	4822 052 10108	1Ω 5% 0,33W
3221	4822 052 10109	10Ω 5% 0,33W
3222	4822 052 10471	470Ω 5% 0,33W
3223	4822 051 20471	470Ω 5% 0,1W
3301	4822 116 83933	15k 1% 0,1W
3302	4822 116 83933	15k 1% 0,1W
3303	4822 117 11149	82k 1% 0,1W
3304	4822 117 11149	82k 1% 0,1W
3305	4822 051 20008	Jumper 0805
3306	4822 051 20008	Jumper 0805
3307	4822 051 20223	22k 5% 0,1W
3308	4822 051 20223	22k 5% 0,1W
3401	4822 050 23301	330Ω 1% 0,6W
3402	4822 050 23301	330Ω 1% 0,6W
3403	4822 050 23301	330Ω 1% 0,6W
3404	4822 050 23301	330Ω 1% 0,6W
3405	4822 117 11507	6k8 1% 0,1W
3406	4822 051 20822	8k2 5% 0,1W
3407	4822 051 20472	4k7 5% 0,1W
3409	4822 051 20008	Jmper 0805
3410	4822 117 10833	10k 1% 0,1W
3411	4822 117 11507	6k8 1% 0,1W
3412	4822 051 20822	8k2 5% 0,1W
3413	4822 051 20472	4k7 5% 0,1W
3415	4822 051 20008	Jumper 0805
3416	4822 117 10833	10k 1% 0,1W
3419	4822 116 83961	6k8 5%
3420	4822 117 10834	47k 1% 0,1W
3421	4822 117 10834	47k 1% 0,1W
3422	4822 051 20472	4k7 5% 0,1W
3423	4822 117 10834	47k 1% 0,1W
3424	4822 117 13579	220k 1% 0.1W
3425	4822 050 21003	10k 1% 0,6W
3426	4822 051 20334	330k 5% 0,1W
3427	4822 117 10837	100k 1% 0.1W
3428	4822 117 10837	100k 1% 0.1W
3429	4822 117 10833	10k 1% 0,1W
3430	4822 117 10833	10k 1% 0,1W
3431	4822 117 10833	10k 1% 0,1W
3432	4822 051 20335	3M3 5% 0,1W
3433	4822 051 20474	470k 5% 0,1W
3434	4822 117 11149	82k 1% 0,1W
3435	4822 051 20474	470k 5% 0,1W
3436	4822 051 20223	22k 5% 0,1W
3437	4822 051 20472	4k7 5% 0,1W
3438	4822 117 10833	10k 1% 0,1W
3439	4822 116 52195	47Ω 5% 0,5W
3440	4822 117 10834	47k 1% 0,1W
3441	4822 117 10834	47k 1% 0,1W
3442	4822 117 11449	2k2 1% 0,1W
3443	4822 051 20472	4k7 5% 0,1W
3444	4822 051 20562	5k6 5% 0,1W
3445	4822 117 10833	10k 1% 0,1W
3446	4822 117 10833	10k 1% 0,1W
3447	4822 117 10833	10k 1% 0,1W
3448	4822 117 10837	100k 1% 0.1W
3449	4822 117 10833	10k 1% 0,1W
3450	4822 117 11449	2k2 1% 0,1W
3452	4822 052 10828	8.2Ω 5% 0,33W
3453	4822 052 10828	8.2Ω 5% 0,33W
3458	4822 051 20472	4k7 5% 0,1W
3459	4822 051 20472	4k7 5% 0,1W
3460	4822 117 10833	10k 1% 0,1W
3461	4822 051 20102	1k 5% 0,1W
3462	4822 051 20102	1k 5% 0,1W
42xx	4822 051 10008	Jumper 1206
43xx	4822 051 20008	Jumper 0805
44xx	4822 051 20008	Jumper 1206 (except see next line)
4408	4822 051 20008	Jumper 0805
4409	4822 051 20008	Jumper 0805

5201	4303 308 75810	Coil
5202	2422 535 97353	680μH 10%
5203	2422 535 97353	680μH 10%
5204	3128 138 38610	Standby transformer
5205	4822 157 70436	8,2μH
5206	4303 308 75820	Relay DC 12V

6501	9337 175 71682	TLSV5100
6201	4822 130 31878	1N4003G
6202	5322 130 31938	BYV27-200
6203	4822 130 83338	LL4148
6204	4822 130 83338	LL4148
6205	4822 130 83338	LL4148
6206	4822 130 83147	DF06M
6207	9338 872 80673	BZX55-F22
6208	4822 130 34281	BZX79-B15
6209	4822 130 30842	BAV21
6210	4822 130 83338	LL4148
6211	4822 130 11421	BT151X-500R
6212	9339 530 90685	TZM-C20
6401	4822 130 30862	BZX79-B9V1
6402	4822 130 30862	BZX79-B9V1
6403	4822 130 34278	BZX79-B6V8
6404	4822 130 34173	BZX79-B5V6
6405	4822 130 31878	1N4003G
6406	4822 130 31878	1N4003G
6407	4822 130 31878	1N4003G
6408	4822 130 31878	1N4003G
6409	4822 130 31878	1N4003G
6410	4822 130 31878	1N4003G
6411	4822 130 31878	1N4003G
6412	4822 130 31878	1N4003G
6413	4822 130 31878	1N4003G
6414	4822 130 31878	1N4003G
6415	4822 130 31878	1N4003G
6416	4822 130 31878	1N4003G
6417	4822 130 31878	1N4003G
6418	4822 130 31878	1N4003G
6421	4822 130 83338	LL4148
6422	4822 130 83338	LL4148
6423	4822 130 83338	LL4148
6424	4822 130 83338	LL4148
6425	4822 130 83338	LL4148
6426	4822 130 83338	LL4148
6427	4822 130 83338	LL4148
6428	4822 130 30621	1N4148
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6432	4822 130 83338	LL4148
6433	4822 130 83338	LL4148
6434	4822 130 31878	1N4003G
6436	4822 130 31878	1N4003G
6437	4822 130 30621	1N4148
6501	9337 175 71682	TLSV5100

7201	4822 209 15867	L4940V12
7203	4822 130 11418	TCDT1102G
7204	4822 130 44568	BC557B
7205	4822 130 60511	BC847B
7206	4822 130 44503	BC547C
7207	4822 130 11417	STP3NB60FP
7401	4822 209 32641	TDA2616Q
7402	4822 209 30095	LM833D
7403	4822 209 30095	LM833D
7404	5322 209 82941	LM358D
7405	5322 209 70225	LM393D
7410	4822 130 60373	BC857B
7411	4822 130 60373	BC857B
7412	4822 130 60511	BC847B
7413	4822 130 60511	BC847B
7414	4822 130 40981	BC337-25
7415	4822 130 60511	BC847B
7416	4822 130 60511	BC847B
7417	4822 130 60511	BC847B